Ongoing Monitoring Report – 2021, 2022 and 2023

Bandiana Military Area

Department of Defence

JBS&G | 61395 | 162,111

11 March 2025



We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

We pay respect to Elders past and present and in the spirit of reconciliation, we commit to working together for our shared future.



Caring for Country The Journey of JBS&G
Artist: Patrick Caruso, Eastern Arrernte

Table of Contents

Abbreviations ..... **v**

Executive Summary ..... **vi**

1. Introduction **1**

1.1 Background 1

1.2 Objectives 2

1.3 Scope of Work 2

2. Base and Environmental Setting **3**

2.1 Base Identification Details 3

2.2 Base Use and Features 3

2.3 Surrounding Land Uses 4

2.4 General Site History 4

2.5 Topography 4

2.6 Climate 5

2.7 Hydrology 5

2.8 Geology and Hydrogeology 6

3. Conceptual Site Model Summary **8**

3.1 Sources 8

3.2 Pathways 9

3.2.1 Surface Water 9

3.2.2 Groundwater 9

3.2.3 Sewerage System 10

3.3 Receptors and Receptor Linkages 10

3.4 Exposure and Risk 11

4. OMP Scope and Sampling **13**

4.1 Overview 13

4.2 OMP Sampling Requirements 13

4.2.1 OMP Sampling Locations 13

4.2.2 Groundwater Sample Locations 17

4.3 Stantec Sampling Event Summary 17

4.4 Deviations from OMP SAQP 18

5. Quality Assurance and Quality Control **20**

6. Assessment Criteria **21**

7. Monitoring Data Summary **24**

7.1 Rainfall 24

©JBS&G Australia Pty Ltd

7.1.1 Rainfall During OMR Period (2021 to 2023) 24
7.1.2 Rainfall During Individual Sampling Events 24
7.2 Groundwater 25
7.2.1 Groundwater Elevations and Flow Direction 25
7.2.2 Groundwater Physiochemical Field Parameters 26
7.2.3 Laboratory Results 27
7.3 Surface Water 29
7.3.1 Surface Water Quality Field Parameters 29
7.3.2 Laboratory Results 30
7.4 Sediment 31
7.4.1 Summary of Field Observations 31
7.4.2 Laboratory Results 31
8. Other Data and Information 32
8.1 DSI Addendum 32
8.1.1 Background and Objective 32
8.1.2 Soil Results 32
8.1.3 Surface Water Results 32
8.1.4 East Bandiana Aquifer Characterisation Results 32
8.1.5 CSM Update 32
8.1.6 Remedial Response 33
8.2 Mass Flux Assessment 33
8.2.1 Background and Objective 33
8.2.2 Mass Flux Study Results 33
8.2.3 Remedial Response 34
9. Discussion 35
9.1 Groundwater 35
9.1.1 Analytical Results Based on Base Conceptual Understanding 35
9.1.2 Analytical Results Based on Weather Conditions 39
9.2 Surface Water 40
9.2.1 Analytical Results Based on Base Conceptual Understanding 40
9.2.2 Analytical Results Based on Weather Conditions 44
9.2.3 Analytical Results Based on Water Flow 44
9.3 Sediment 44
10. Potential Implications of OMR for PMAP 48
10.1 CSM 48
10.1.1 Source Areas 48
10.1.2 Pathways 48

10.1.3 Receptors 48
10.1.4 CSM Revision 48
10.2 Risk Profile 48
11. Conclusions 50
11.1 Groundwater 50
11.2 Surface Water 50
11.3 Sediment 51
11.4 CSM and Risk Profile Update 51
11.5 Program Triggers or Actions 51
12. Limitations 53
13. References 54

List of Tables

Table 2.1: Site Identification Details 3
Table 2.2: Site Use and Features 3
Table 2.3: Surrounding Land Uses 4
Table 3.1: Receptors and Associated Potential Receptor Linkages 10
Table 4.1: OMP Sampling Locations as per PMAP (Defence 2020) 15
Table 4.2: OMP Sampled Wells vs. Aquifers 17
Table 4.3: OMP Sampling Event Summary 18
Table 4.4: Deviations from OMP SAQP Summary 18
Table 6.1: Groundwater and Surface Water Environmental Values 21
Table 6.2: Groundwater and Surface Water Environmental Values On- and Off-Base 21
Table 6.3: Adopted PFAS Criteria for OMP – Water 22
Table 7.1: Rainfall During Sampling Events 24
Table 7.2: Summary of Groundwater Elevation – Shepparton Colluvium 25
Table 7.3: Summary of Groundwater Elevation – Shepparton and Coonambidgal Fluvium 26
Table 7.4: Overview of Recorded Field Parameters 26
Table 7.5: Summary of Groundwater Analytical Results Exceedances 27
Table 7.6: Summary of Surface Water Analytical Results Exceedances 30
Table 7.7: Summary of Sediment Analytical Results 31
Table 8.1: Estimated Mass Flux Summary 33
Table 9.1: Interpretation of Groundwater OMR Results 36
Table 9.2: Interpretation of Surface Water OMR Results 41
Table 9.3: Interpretation of Sediment OMR Results 46

Appendices

Appendix A **Cardno SAQP (2024b)**
Appendix B **OMP Groundwater Well Details**
Appendix C **OMP Factual Sampling Report – November 2021**
Appendix D **OMP Factual Sampling Report – May 2022**
Appendix E **OMP Factual Sampling Report - October 2022**
Appendix F **OMP Factual Sampling Report – May 2023**

©JBS&G Australia Pty Ltd

Appendix G **OMP Factual Sampling Report – October 2023**

Appendix H **Summary of Sample Event Variation from OMP SAQP**

Appendix I **Water Quality Parameter Tables**

Abbreviations

Term	Definition
AFFF	Aqueous Film Forming Foam
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended in 2013)
BMA	Bandiana Military Area
BoM	Bureau of Meteorology
CSM	Conceptual Site Model
CSR	Contaminated Site Record
DO	Dissolved Oxygen
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EPA	Environment Protection Authority Victoria
ERS	Environment Reference Standards
HEPA	Heads of Environmental Protection Authority's Australia and New Zealand
HHERA	Human Health and Ecological Risk Assessment
IP	Interface Probe
JBS&G	JBS&G Australia Pty Ltd
LOR	Limit of Reporting
mBTOC	Metres below top of case
mbgl	Metres below ground level
mAHD	Metres Australian Height Datum
NEMP	Heads of EPAs Australia and New Zealand (HEPA), PFAS National Environmental Management Plan – Version 2; January 2020
OMP	Ongoing Monitoring Plan
OMR	Ongoing Monitoring Report
ORP	Oxidation Reduction Potential
PFAS	Per- and poly-fluoroalkyl substances
pH	Potential of Hydrogen
PMAP	PFAS Management Area Plan
PFHxS	Perfluorohexane sulfonate
PFOA	Perflourooctanoic acid
PFOS	Perfluorooctane sulfonate
QA/QC	Quality Assurance / Quality Control
RAP	Remedial Action Plan
SAQP	Sampling, Analysis and Quality Plan
TDS	Total Dissolved Solids
TOC	Top of Casing

Executive Summary

General

JBS&G Australia Pty Ltd (JBS&G) has been engaged by the Department of Defence (Defence) to complete an Ongoing Monitoring Report (OMR) for the Bandiana Military Area (BMA or the base) and surrounding Management Area. The OMR includes the results of five Per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) sampling events that occurred during the period 2021 to 2023.

PFAS are a group of synthetic (i.e. 'man-made') compounds widely used around the world since the 1950s to make products that resist heat, stains, grease and water. Defence have historically stored and used PFAS containing aqueous film forming foam (AFFF) products on-base for firefighting purposes, which has resulted in PFAS contamination on and in the vicinity of the Defence estate.

The Management Area comprises both on-base and off-base areas. The on-base area comprises three separate portions of the base known as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks). PFAS has historically left the base into the off-base areas primarily by surface water runoff in North and South Bandiana and by groundwater flow in East Bandiana.

Objective

The objective of this OMR is to review data and determine if a) there are any significant changes in PFAS concentrations or areas affected by PFAS and b) if there are any risks to the community that require further management.

Monitoring Scope

The scope of the monitoring consisted of sampling of 46 groundwater wells, 54 surface water locations and 12 sediment locations across the base and surrounding area. While sampling occurs twice yearly, some locations are only sampled once a year (season dependent). The sampling events in this report occurred in November 2021, May 2022, October 2022, May 2023 and October 2023.

Groundwater

Groundwater levels (or depths) were higher during this period owing to above average rainfall. The area experienced 1,140 mm during 2022 compared to the annual average of 710 mm. This water level change may have contributed to some minor increasing PFAS concentration trends, particularly on-base where PFAS can reside in soil.

Groundwater flow directions across the BMA are consistent with the conceptual understanding of groundwater movement and generally follow the topography. The Shepparton Colluvium shallow aquifer (South Bandiana and North Bandiana) flows in a west and north westerly direction towards Jack in the Box Creek, while the Shepparton and Coonambidgal Fluvium aquifer at East Bandiana flows in a north easterly direction towards the Kiewa River.

The groundwater PFAS concentrations in off-base areas from the five OMP sampling rounds are relatively stable and consistent with the outcomes of historical and more recent investigations.

On-base, monitoring identified elevated PFAS concentration ins Source Area 1, the Petroleum Platoon – Former Fire Training Ground on South Bandiana, and Source Area 7, the Old Fire Station, Building 421 on South Bandiana. This data triggered Defence to request JBS&G to conduct further investigations to determine if remediation or further management actions are required.

Surface Water

The surface water results obtained from the five OMP sampling rounds were consistent with previous data.

Elevated PFAS concentrations were identified within several specific portions of South and North Bandiana (i.e. surrounding Source Areas) which is consistent with the conceptual understanding of these areas and consistent with existing investigation work. The surface water concentrations within East Bandiana were much lower by comparison and were also consistent with existing investigation work from this area.

Sediment

PFAS concentrations in sediment within surface water drainage pathways are representative of their location relative to Source Areas, with higher concentrations identified in areas immediately adjacent Source Area/in areas where elevated surface water concentrations are present. Sediment PFAS concentrations tend to decrease with distance from a Source Area.

Sediment concentrations from the OMP were compared to the historic results from 2017 and 2019, and were generally equal to, or less than the previous results.

Risk Summary

The OMP results did not identify any additional Source Areas which had not been previously assessed and no additional transport/exposure pathways or changes to existing pathways have been identified.

The OMP analytical results discussed as part of this OMR were generally within ranges identified and considered in previous investigation reports. Where PFAS increases have been identified during an OMP event, a review has been completed of the source-receptor pathway to identify if there has been a material change in risk to on and off-base receptors. No material changes have been identified.

Based on the review completed during this monitoring period, the risk assessment remains current and no further precautionary advice is warranted. It is noted that the Environment Protection Authority Victoria (EPA) has advised against consumption of Carp caught in the Kiewa River between Bakers Land and the Cudgewa-Wodonga Rail Trail, inclusive of the flood plain area bound by Bakers Lane and the Murray Valley Highway. A review of risk will be completed in future OMRs to reflect the results of a Water Use Survey program that Defence are undertaking in targeted areas of the Management Area.

Conclusions

Based on the assessment completed as part of this OMR, it was concluded that the objectives of the OMP have been achieved by the program. The assessment has identified that PFAS concentrations during the 2021 to 2023 period were generally consistent with previous investigation and historic data and as a result there has been no material change in risk to on and off-base receptors.

While the existing monitoring network is sufficient to continue monitoring of PFAS identified within Source Areas and migration pathways, there are several recommended alterations to the OMP monitoring program, including the following:

- Further monitoring of groundwater immediately off-base to the north of East Bandiana to delineate the known East Bandiana PFAS plume to the oxbow lake closest to the base boundary;
- Owing to the proximity of Source Area 1 to the base boundary and increases in MW307, collection of additional samples to ensure the monitoring of the potential migration of the PFAS plume;
- The addition of wells in North Bandiana to the program to ensure adequate data is available to calculate groundwater flow contours in this portion of the base, and to delineate elevated groundwater PFAS concentrations recently detected;
- Off-base monitoring through the provision of a new well (MW447) to the east of North Bandiana to characterise the PFAS plume prior to potentially entering the Killara residential development; and
- Discontinuation of sediment sampling as part of the OMP as there are no obvious trends in the data and they do not present a risk to people off-base.

©JBS&G Australia Pty Ltd

Defence has planned remedial works commencing in 2025 that will consist of remediation of Source Areas across South and East Bandiana as well as groundwater remedial works, also in East Bandiana. These works will in time contribute to reductions of PFAS concentrations in the Management Area however given the size of the area impacted, this will be a slow process. In the meantime, monitoring will continue, and advice will be provided to the community to ensure risks presented by PFAS are managed.

1. Introduction

JBS&G Australia Pty Ltd (JBS&G) has been engaged by the Department of Defence (Defence) to complete an Ongoing Monitoring Report (OMR) for the Bandiana Military Area (BMA or the base) and surrounding Management Area. The OMR includes the results of five Per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) sampling events that occurred during the period 2021 to 2023.

PFAS are a group of synthetic (i.e. 'man-made') compounds widely used around the world since the 1950s to make products that resist heat, stains, grease and water. Defence have historically stored and used PFAS containing aqueous film forming foam (AFFF) products on-base for firefighting purposes, which has resulted in PFAS contamination on and in the vicinity of the Defence estate.

BMA is located adjacent to the New South Wales (NSW) – Victorian State border southeast of Wodonga, Victoria. BMA itself comprises three areas, the boundaries of which have been provided in **Figure 1**:

- Gaza Ridge Barracks (North Bandiana);
- Gaza Ridge Barracks (South Bandiana); and
- Wadsworth Barracks (East Bandiana).

The Management Area has also been shown in **Figure 1** and comprises BMA along with off-base areas including Jack in the Box Creek, Kiewa River and their associated floodplains. The Management Area was derived based on the results of the Detailed Site Investigation (DSI) (Golder 2018)[1] and related to pathways in surface water and groundwater for potential PFAS contamination derived from BMA. These pathways were further refined as part of the Detailed Site Investigation Addendum (DSI Addendum) (JBS&G 2024a)[2] and the Mass Flux Study (JBS&G 2024b)[3].

This report presents the findings of five sampling events from the OMP conducted across both the BMA and the surrounding Management Area.

1.1 Background

BMA has been subject to previous investigations that have identified contamination as a result of the historical use of AFFF that contained a number of PFAS that are known to be persistent in the environment and in humans. The PFAS compounds of primary interest include perfluorooctane sulfonate (PFOS), perflourooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS). Based on the results of previous investigations, there is strong evidence demonstrating that base-derived PFAS contamination has migrated off-base and will continue to migrate away from Source Areas located on-base without implementing management controls. Although, a Human Health and Ecological Risk Assessment (HHERA) (Golder 2020)[4] has been completed and shows that risk for scenarios currently being realised both on- and off-base are low and

[1] *PFAS Detailed Site Investigation, Bandiana Military Area*. Document Number 1777738-081-R-RevB. Golder Associates Pty Ltd. 14 September 2018. (Golder 2018).

[2] PFAS Management Area Plan (PMAP) Delivery at Bandiana Military Area, Detailed Site Investigation (DSI) Addendum. Document Number 61395/ 146,407 Rev 1. JBS&G Australia Pty Ltd. 14 June 2024. (JBS&G 2024a).

[3] *PFAS Mass Flux Study – PFAS Management Area Plan (PMAP) Delivery at Bandiana Military Area*. Document Number 61395/ 153,765 – Draft Rev B. JBS&G Australia Pty Ltd. 6 September 2024. (JBS&G 2024b).

[4] *Human Health and Ecological Risk Assessment, Bandiana Military Area*. Document Number 1777738-150-R-RevB. Golder Associates Pty Ltd. November 2020. (Golder 2020).

acceptable, with risks which are potentially unacceptable relating to scenarios which are not currently occurring (see **Section 3.3** for further details).

The PMAP (Defence 2020)[5] was created to provide a roadmap to detail the management measures for the response management by Defence of potential risks arising from PFAS contamination associated with BMA and surrounding areas. As part of the PMAP, management actions were implemented to achieve this objective, one of which was the completion of the OMP, which sets out a program of monitoring twice yearly across BMA and the Management Area.

The purpose of the OMP, as defined in the PMAP (Defence 2020), is to set out the requirements for collection of adequate data to identify and evaluate:

- Spatial and temporal (including seasonal) variability of PFAS in the environment;
- Changes to PFAS sources, transport pathways and/or receptors for the BMA and wider Management Area;
- Whether risks to human and ecological receptors require review; and
- Whether the identified changes in PFAS concentrations during the OMP trigger an action and/or review.

The OMP, in accordance with the scope provided in the PMAP (Defence 2020) commenced at BMA in November 2021, with the works being completed by Cardno Victoria Pty Ltd (now Stantec). From this date, the OMP has been completed twice yearly. This OMR summarises sampling events completed by Stantec during November 2021, May 2022, October 2022, May 2023 and October 2023.

1.2 Objectives

The objective of this OMR is to review data and determine if a) there are any significant changes in PFAS concentrations or areas affected by PFAS and b) if there are any risks to the community that require further management.

1.3 Scope of Work

JBS&G completed the following scope of work as part of this OMR:

- Review of base and environmental settings to provide context to OMP data;
- Review monitoring data from Stantec's OMP monitoring events from November 2021, May 2022, October 2022, May 2023 and October 2023;
- Analysis of the PFAS concentration trends across the monitoring period; and
- Completion of this OMR detailing findings to the relevant objectives of the report.

[5] *Bandiana Military Area, PFAS Management Area Plan*. Document Number 1777738-153-R-RevA. Department of Defence. November 2020. (Defence 2020).

2. Base and Environmental Setting

The following base and environmental setting information has been summarised from previous investigations across the base.

2.1 Base Identification Details

The base is located approximately 255 kilometres (km) northeast of Melbourne and is adjacent to the New South Wales – Victorian State border. It is located on the eastern fringe of the large town of Wodonga. The site details have been summarised in **Table 2.1** below. The site boundary has been provided in **Figure 1**.

Table 2.1: Site Identification Details

Item	Details
Site Address	Murray Valley Highway, Bandiana
Site Area	650 hectares
Site Owner and Occupier	Department of Defence
Municipality	Wodonga City Council
Legal Description	North Bandiana – 2 PS437772, 1 and 2 TP849697 South Bandiana – 1, 2 and 3 TP849698, 3 PS420756 and 2 PS420756 East Bandiana – 1 TP849660, 1 TP139782 and 1 TP81825
Zoning	Commonwealth Land under the Wodonga Planning Scheme Amendment C120

2.2 Base Use and Features

The base is primarily used for administration, accommodation, training, equipment maintenance and storage and warehousing/logistics associated with Defence activities. The general land uses and features present across each area of the site has been provided in **Table 2.2**.

Table 2.2: Site Use and Features

Item	Details
South Bandiana (Gaza Ridge Barracks)	• Built infrastructure such as workshops, warehouses, office buildings, gymnasium, hardstand areas including roads and vehicle access and training areas; • On-base personnel accommodation areas; • Bandiana Primary School; • Golf course; • The Bandiana Army Museum; • Former and current fire training areas; • Grassed and vegetated areas which are generally undeveloped and contain little to no infrastructure; and • Sheep grazing is permitted in the southwestern portion of BMA along the base of Bears Hill.
North Bandiana (Gaza Ridge Barracks)	• Built infrastructure such as workshops, warehouses, office buildings, gymnasium, hardstand areas including roads and vehicle access and training areas; • On-base personnel accommodation areas; • Bandiana Neighbourhood House (child care centre); and • Grassed and vegetated areas which are generally undeveloped and contain little to no infrastructure.
East Bandiana (Wadsworth Barracks)	• Built infrastructure such as workshops, warehouses, office buildings, gymnasium, hardstand areas including roads and vehicle access and training areas;

	• Test track; and • Current fire station.

2.3 Surrounding Land Uses

The land uses surrounding the BMA has been summarised in **Table 2.3**.

Table 2.3: Surrounding Land Uses

Item	Details
North	Huon Hill Parklands is located directly north of North Bandiana, while residential developments are located directly north of East and South Bandiana. Commercial properties are also present along Anzac Parade located to the north of South Bandiana. Beyond the parklands is the Murray River and associated floodplain.
East	Residential developments are present east of both East and North Bandiana, while commercial properties and open farmland is east of South Bandiana. Beyond this is the Kiewa River and associated floodplain.
South	Bears Hill is used primarily for grazing and is located directly south of South Bandiana. Commercial properties, open farmland and minor rural residential development is present south of North and East Bandiana.
West	Wodonga townships is located directly west of the base and consists primarily of residential properties, with areas of commercial and/or industrial development.

2.4 General Site History

The full site history of the BMA has been detailed in the DSI (Golder 2018). The following site history summary was provided in the DSI:

North, South and East Bandiana were acquired in 1942 as part of the war efforts during World War II, with an estimated 4,000 troops stationed there to operate the facility. At this time, the facility served as a tank armoured vehicle and equipment workshop as well as containing administration and warehouse facilities. Vehicle handling included receiving vehicles direct from manufacturers and holding them before issue within Australia or overseas (which continues today). Construction of storage depots and workshops commenced in 1942, with railway tracks from NSW and Victoria also established around this time. The BMA has remained in use as a storage and vehicle processing facility with the addition of Army logistics training.

The North Bandiana Historic Warehouse Precinct, developed during World War II between 1942 and 1945, is recognised as one of Australia's largest facilities for the storage and processing of technical and motor transport stores. Since the early 1960s many of the World War II buildings at the three facilities have been demolished to make way for new constructions such as training, administration and accommodation facilities. Furthermore, from approximately the mid-1990s, portions of the property have been progressively divested. These have included the portions of the land now occupied by the adjacent residential estates.

2.5 Topography

The base is part of a relatively low-lying river and creek floodplain located between two topographically significant features (Huon Hill to the north and Bears Hill to the south, as shown on **Figure 1**). There is a topographic divide that runs across BMA in a general north-south alignment. To the west of the divide, the area generally slopes to the northwest towards Jack in the Box Creek, while to the east of the divide, the area generally slopes to the east or northeast towards the Kiewa River. Elevation of the respective areas of the base are as follows:

- **South Bandiana**: this portion of the base generally slopes gently from the southern boundary, 240 m above sea level at its highest point, to the northern boundary, 175 m above sea level at its lowest

point. South Bandiana is divided into two separate watersheds which slope to the northwest and northeast respectively;

- **North Bandiana:** this portion of the base generally slopes gently from northwest, approximately 203 m above sea level at its highest point, to the eastern boundary of the site, approximately 165 m; and
- **East Bandiana**: this portion of the base generally slopes gently from the western boundary, approximately 167 m above sea level at its highest point, to the eastern boundary of the base, approximately 157 m above sea level. The eastern portion of East Bandiana (to the east of the test track) falls off into the Kiewa River floodplain.

2.6 Climate

Long-term climatic data collected from the closest Bureau of Meteorology (BoM) station located at Wodonga (2.7 km west of base), indicated the following between 1898 and 2018:

- Annual rainfall is approximately 710 mm;
- Highest average monthly rainfall is approximately 81.2 mm, which occurs in July;
- Lowest average monthly rainfall is approximately 38.3 mm, which occurs in February;
- The highest average temperature is 31.8 °C, which occurs in January; and
- The lowest average temperature is 12.6 °C, which occurs in July.

It should be noted that rainfall data from the sampling events and from the sampling period (i.e. 2021 through 2023) has been discussed in **Section 7.1**.

2.7 Hydrology

As indicated previously, the base is divided into two catchments. West of the topographic divide flows to the northwest towards Jack in the Box Creek, while east of the divide flows into Middle Creek and an unnamed creek, both of which flow into the Kiewa River. Both the Jack in the Box Creek and Kiewa River catchments drain north into the Murray River catchment.

West of the divide comprises the western portion of South Bandiana, with the divide occurring approximately along Russell Road (internal road). Surface water is drained by a series of below ground stormwater infrastructure and above ground natural and man-made channels. Surface water flows in a north to northwest direction and exits the base via a surface channel which flows directly into Jack in the Box Creek. The on-base surface water channels are primarily ephemeral and only have flow during or immediately following rainfall. Jack in the Box Creek flows into Wodonga Creek, located approximately 3.5 km north of the base.

East of the divide comprises the balance of the base. The eastern most portion of South Bandiana drains eastward overland into Middle Creek which flows approximately 2.8 km east into Kiewa River. The balance of South Bandiana drains north into North Bandiana, with accumulated surface water flowing northeast across this portion of the base before exiting the eastern boundary adjacent Whytes Road and flowing down an unnamed creek before discharging into the Kiewa River approximately 1.4 km northeast of the base. East Bandiana stormwater flows to the northeast and is discharged into off-base oxbow lakes on the Kiewa River floodplain immediately east of the base. Surface water infrastructure on the balance of the base also comprises of a series of below ground stormwater infrastructure and surface drainage channels. The Kiewa River is a meandering watercourse and discharges into the Murray River approximately 3.0 km north of the base.

The stormwater divide and general surface water flow directions have been provided in **Figure 3**.

2.8 Geology and Hydrogeology

Details of the regional and local geological/hydrogeological setting are provided in previous investigation reports such as the DSI (Golder 2018) and DSI Addendum (JBS&G 2024a). There are three main geological units which are present at the base. From deepest to shallowest these are as follows:

- **Omeo-Metamorphic Complex**: Ordovician aged schist with intrusions of granite and gneiss. This material forms the bedrock of the area, with both Bears Hill and Huon Hill consisting of this unit;
- **Shepparton Formation:** Tertiary aged deposits of sand, silt and clay. Erosion and accumulation of sediments from the local hill are defined as the Shepparton Colluvium and can be found through the centre of the base. Deposition of alluvial sediments also occurred during this period and are termed the Shepparton Fluvium and are primarily found in the northwest and southwest of the site; and
- **Coonambidgal Formation:** Quaternary aged deposits of sand, silt and clay. More recent hill erosion is defined as the Coonambidgal Colluvium and can be found around the foot of Bears Hill and Huon Hill. Deposition around current waterways, including the Murray River, Kiewa River, Wodonga Creek and Middle Creek, is the Coonambidgal Fluvium.

While groundwater is present within the bedrock, the primary aquifers of concern with respect to PFAS are those present in the unconsolidated Shepparton and Coonambidgal Formations and in particular the colluvium at North and South Bandiana and fluvium at East Bandiana. These are discussed below for each portion of the base:

- **South Bandiana:** the sub surface at South Bandiana generally consists of unconsolidated hill-wash deposits (colluvium) (sands, silts, clays and gravels) from the Quaternary (Coonambidgal) and Tertiary (Shepparton) period. Based on site observations, the material consists primarily of fine-grained sediments (clays and silts) with some interbedded sands and gravels. These unconsolidated formations have been encountered to depths of approximately 32 to 36 metres below ground level (mbgl) depending on position on-base. Across the flatter northern portion of South Bandiana, the depth to groundwater in ranges between 10 to 15 mbgl, although this increases up to approximately 40 mbgl in the sloped southern portion (depending on seasonality and weather conditions);
- **North Bandiana:** observations from the northern and western portions of North Bandiana are considered representative of the Shepparton Colluvium, while the south portion is more consistent with the Shepparton Fluvium (alluvial sediments). In the north and west of North Bandiana, groundwater depth is up to 14.7 mbgl, while to the south east it is between 1.8 to 3.8 mbgl; and
- **East Bandiana**: observations from East Bandiana identified various layers of clays, silt and sand across the base consistent with a depositional environment (Shepparton/Coonambidgal Fluvium). Due to the presence of PFAS at the base boundary this area has been subject to significant investigation works. The depositional processes that occurred in this area of the base have resulted in a distribution of permeable sediments that is highly variable. The shallow portion (<10 mbgl) of the aquifer includes variably distributed (and generally discontinuous) sands and clays and has standing water levels ranging between approximately 6.6 and 8.2 m below top of case (mBTOC). A more continuous sandy layer is present between 10.0 and 15.0 mbgl and has a standing water level range between approximately 6.6 and 8.1 mBTOC. The sandy layer has an estimated hydraulic conductivity of approximately 10-20 m/day. Beneath the sandy layer, clay is present to the depth of completed investigations.

Groundwater flow directions are consistent with topography and surface water drainage. In South Bandiana, groundwater flow is primarily to the northwest towards Jack in the Box Creek, while in North and East Bandiana it is primarily to the east towards Kiewa River.

The Kiewa River, associated oxbows, Wodonga Creek and possibly the northern portion of Jack in the Box Creek are likely gaining streams (i.e. surface water bodies which receive groundwater discharge). Middle Creek and the unnamed creek are considered losing streams (surface water discharges into groundwater).

In addition to the above, it has been identified that a deeper sandy portion of the aquifer (i.e. between 10.0-15.0 mbgl) on East Bandiana intercepts one or more off-base oxbow lakes in the Kiewa River Floodplain to the northeast of the base.

©JBS&G Australia Pty Ltd

3. Conceptual Site Model Summary

A summary of the current Conceptual Site Model (CSM) for the BMA and Management Area has been summarised in the sections below.

3.1 Sources

Investigations completed to date have identified that there are various sources of PFAS across the base which relate to use or storage of AFFF products. Source Areas 1 through 15 (see **Figure 2** for locations) are considered the primary sources of PFAS, although varying concentrations of PFAS have been reported for affected media. The Source Areas also relate to different surface water catchments, flowing into Jack in the Box Creek or Kiewa River – further discussed in **Section 3.2** below. Current investigation results divide the identified PFAS Source Areas into the following categories:

- PFAS concentrations above relevant health-based criteria (refer **Section 6** for further details on criteria): Source Areas 1, 2, 5, 6, 7, 9, 11, 12, 13, 14 and 15;
- PFAS concentrations above laboratory standard limits of reporting, but below health-based criteria: Source Area 10; and
- Not considered a source: Source Areas 3, 4 and 8.

Description of the Source Areas as identified by the DSI (Golder 2018), and their respective Contaminated Site Record (CSR) ID, with PFAS concentrations above laboratory standard limits of reporting are as follows:

- Source Area 1 (CSR_VIC_000353) – Petroleum Platoon – Former Fire Training Ground (South Bandiana);
- Source Area 2 (CSR_VIC_000478) – Base Fire Services (BFS) – Former Fire Training Ground (South Bandiana);
- Source Area 5 (CSR_VIC_000365) – Petroleum Platoon – Fuel Handling Facility (South Bandiana);
- Source Area 6 (CSR_VIC_000350) – Fire Training Area, Building 600 (South Bandiana)[6];
- Source Area 7 (CSR_VIC_000357) – Old Fire Station, Building 421 (South Bandiana);
- Source Area 9 (CSR_VIC_000374) – Petroleum, Oils and Lubricants (POL), Building 490 (South Bandiana);
- Source Area 10 (CSR_VIC_000479) – Former Unit Training Area, between Warehouse 1 and 2 (North Bandiana);
- Source Area 11 (CSR_VIC_000480) – Fire Extinguisher Disposal – Warehouse 13 (North Bandiana);
- Source Area 12 (CSR_VIC_000483) – Armoured Vehicle Maintenance Training, Building 100 (North Bandiana);
- Source Area 13 (CSR_VIC_000383) – Fire Station – Current (East Bandiana);
- Source Area 14 (CSR_VIC_000481) – Former Unit Training, Building 592 (East Bandiana); and
- Source Area 15 (CSR_VIC_000482) – Former Unit Training, Football Field (East Bandiana).

[6] Source Area 6 in previous documentation, including the PMAP (Defence 2020), has been identified as the Current Fire Training Area, Building 600. A new Fire Training Area however has since been constructed and commissioned and the facility located at Source Area 6 retired from active service. This Source Area will therefore just be referred to as the Fire Training Area, Building 600 for the balance of this document.

It should be noted that Defence have completed significant investigation work subsequent to the DSI (Golder 2018) which have provided further data on Source Areas and their contribution of PFAS mass to the migration pathways. This additional work has identified a PFAS plume in multiple aquifers originating from Source Area 13 that is migrating northeast across East Bandiana and migrating into off-base areas. Furthermore, several Source Areas, including Source Area 1, 6 and 7 on South Bandiana (further discussed in this report), identified concentrations of PFAS in soil which are considered to contribute to PFAS concentrations in surface water. Based on this, these four Source Areas and pathways are the primary focus of Defence and remediation work is planned to be carried out during 2025 to reduce PFAS migration levels. All other Source Areas across BMA continue to be monitored as part of the OMP program to ensure PFAS concentrations continue to present a low risk to on- and off-base users and the environment, however, are not to be considered for remediation at this stage.

3.2 Pathways

3.2.1 Surface Water

Surface water drains into and across BMA in a network of above ground drainage channels, swales and shallow below ground pipes. Surface water has been identified as a pathway for migration of PFAS from identified PFAS Source Areas on North, South and East Bandiana towards both Jack in the Box Creek and Kiewa River catchments. PFAS will continue to migrate through this pathway in the absence of management controls. Broadly the surface water catchment for the base runs north to south, with a divide through South Bandiana in the approximate location of Russell Road. Based on this, surface water drainage from the following Source Areas flow into each of the two respective catchments shown in **Figure 3**:

- Jack In the Box Creek (flow direction to the west/northwest) receives surface water from South Bandiana that includes Source Areas 1, 2, 5 (partial), 6 and 7;
- Kiewa River (flow direction to the east):
    - South Bandiana – Source Areas 5 (partial) and 9;
    - North Bandiana – Source Areas 10, 11 and 12; and
    - East Bandiana – Source Areas 13, 14 and 15.

Based on investigations completed to date, the primary PFAS transport pathway for both South and North Bandiana has been shown to be through surface water, primarily owing to PFAS leaching from soils and infrastructure in the key Source Areas identified above. Surface water is a secondary PFAS transport pathway for East Bandiana. Site history (Golder 2018) has shown that previous base re-development has either capped or removed a large portion of potentially PFAS affected soils within East Bandiana, removing this as a potential source for surface water.

3.2.2 Groundwater

In the Management Area, and particularly on the base itself, groundwater has been identified as a primary pathway for the migration of PFAS from Source Areas in East Bandiana and as a secondary pathway for those in South and North Bandiana. Groundwater is likely discharging to the lower portion of Jack in the Box Creek from a portion of South Bandiana and to the oxbows in the Kiewa River floodplain or the Kiewa River itself for the balance of the base.

Groundwater contours within the Management Area, consistently show that a groundwater divide is present through the centre of the Area – on-base through North Bandiana itself. Based on this, groundwater flow from the following Source Areas can be attributed to each of the two catchments:

- Jack in the Box Creek (flow direction to the west/northwest):
    - South Bandiana – Source Areas 1, 2, 5, 6, 7 and 9; and

- North Bandiana – Source Areas 10 (partial) and 12 (partial).

- Kiewa River (flow direction to the east):
  - North Bandiana – Source Areas 10 (partial), 11 and 12 (partial); and
  - East Bandiana – Source Areas 13, 14 and 15.

Due to a combination of the depth to groundwater, the clayey nature of the geology below the Jack in the Box Creek catchment portion of the base in North and South Bandiana and the distance to the discharge point, PFAS from Source Areas migrates slowly from soil into groundwater and there is limited lateral migration in groundwater. Therefore, groundwater is not considered a significant pathway for PFAS discharge off-base to this catchment, although significant (>100 ug/L of Sum PFAS) PFAS concentrations have been identified in several Source Areas within these portions of the base, including Source Area 1 and 7. In these instances, the concentrations of PFAS in groundwater are due to historic excavation/use of a fire training bund and installation of infrastructure, respectively. These areas will be the subject of remedial action.

In the eastern portion of the Management Area, the geology and hydrogeology differ to North and South Bandiana, with the Shepparton Fluvium on this part of the base and off-base to the east in the Kiewa River catchment comprising variable deposits of sands, clays and silts. Previous investigations have identified a relatively continuous sand layer, semi-confined and interconnected with shallower and deeper portions of the aquifer, below East Bandiana between a depth of approximately 10.0-15.0 mbgl. The depth of this layer correlates with the off-base springs, oxbow lakes and the Kiewa River situated beyond the northeastern boundary of the base. Groundwater flow in this layer is therefore considered a pathway for PFAS migration from East Bandiana.

3.2.3 Sewerage System

A sewerage network has been constructed below ground across North, South and East Bandiana and services the base buildings. The sewerage network runs within or adjacent to multiple Source Areas before discharging off-base to the North East Region Water municipal waste treatment facility. Previous investigation work included PFAS analysis from the sewer. It was identified that minor PFAS concentrations infiltrate into sewerage infrastructure during rain events from Source Areas, while PFAS is also likely present within the concrete infrastructure of the system itself, which diffuses back into sewage which flows occur. Overall, the sewerage network is considered a secondary pathway for PFAS migration for the BMA, compared to groundwater and surface water pathways.

3.3 Receptors and Receptor Linkages

There are a variety of on and off-base receptors who could potentially be affected by PFAS, which have been summarised in **Table 3.1**.

Table 3.1: Receptors and Associated Potential Receptor Linkages

Exposure Group	Potential Exposure Via
On-base residents	• Incidental ingestion of soil and/or water on the base and eating potentially impacted biota grown or caught on the base; • Inhalation of dust; or • Eating potentially affected biota grown within the catchment area, including home grown foods, such as fruit and vegetables and livestock.
On-base workers, army personnel and visitors who work or visit the base	• Incidental ingestion of soil and/or water on the base; or • Inhalation of dust.

Exposure Group	Potential Exposure Via
On-base terrestrial or aquatic ecosystems including flora and/or fauna	• Direct contact with and/or uptake of contaminants from soil, sediment or surface water; • Ingestion by fauna including eating affected biota (including incidental ingestion of soil/sediment adhering to plants/grass) and drinking impacted surface water; or • Ingestion by fauna of greater PFAS concentrations by higher trophic level predatory species due to the tendency for PFAS compounds to bioaccumulate and biomagnify within ecosystems.
Off-base sensitive receptors including people who either live, or attend schools or childcare facilities within the portions of the Jack in the Box Creek or Kiewa River catchments downstream of the base	• Drinking potentially affected water; • Incidental ingestion of potentially affected soil, sediment, surface water or groundwater; • Inhalation of potentially affected dust; or • Eating potentially affected biota grown, caught or reared within the catchment area, including home grown or agriculturally produce.
Recreational users including people using public open recreational spaces within the portions of the Jack in the Box Creek or Kiewa River catchments downstream of the base	• Incidental ingestion of potentially affected soil, sediment, surface water or groundwater; • Inhalation of potentially affected dust; or • Eating potentially affected biota caught within the catchment area, including recreationally caught fish and yabbies.
Commercial/industrial workers including general commercial/industrial workers, sewage treatment plant workers and maintenance/trench workers operating within the portion of the Jack in the Box Creek or Kiewa River catchments downstream of the base	• Incidental ingestion of potentially affected soil, sediment, surface water, sewage or groundwater; or • Inhalation of potentially affected dust.
Off-base terrestrial or aquatic ecosystems including flora and/or fauna	• Incidental ingestion of potentially affected soil, sediment, surface water or groundwater; or • Inhalation of potentially affected dust.
Off-base terrestrial or aquatic ecosystems including flora and/or fauna	• Direct contact with and/or uptake of contaminants from soil, sediment or surface water; • Ingestion including eating impacted biota (including incidental ingestion of soil/sediment adhering to plants/grass) and drinking affected surface water; or • Ingestion of greater PFAS concentrations by higher trophic level predatory species due to the tendency for PFAS compounds to bioaccumulate and biomagnify within ecosystems.

3.4 Exposure and Risk

The work undertaken to inform the DSI (Golder 2018), HHERA (Golder 2020) and DSI Addendum (JBS&G 2024a) has confirmed that for each of the key exposure scenarios identified as currently being realised, the potential exposure to PFAS was assessed to present a low and acceptable risk to human health. These realised exposure scenarios, which related to both on-base and off-base areas, are as follows:

- Home consumption of sheep (meat) raised on-base;

- Extraction of water from Wodonga Creek by North East Water for the municipal town supply;
- Home consumption of cattle (meat and offal) raised within the northern pastoral areas (i.e. area to the east of the Killara residential development);
- Residents who consume home grown produce (vegetables) and poultry eggs watered with groundwater extracted from adjacent to the northern section of East Bandiana;
- Recreational users (e.g. swimming, boating) within the Wodonga Creek, Kiewa River and unnamed creek waterways;
- Consumption of Murray Cod recreationally caught from the Kiewa River;
- Consumption of crustaceans recreationally caught from Jack in the Box Creek and unnamed creek; and
- Use of groundwater drinking water (one property).

The only potentially unacceptable human health risks were associated with unrealised scenarios which were assessed to inform stakeholders of potential future risks. There were eight risks identified in total which have been summarised in the following points:

- Use of groundwater as drinking water or stock watering;
- Home consumption of cattle (meat and offal) raised within the southern pastoral area;
- Consumption of recreationally caught carp from the main Kiewa River channel, oxbow lakes of the Kiewa River floodplain and Unnamed Creek;
- Consumption of recreationally caught fin fish and yabbies from oxbow lakes in the floodplain of the Kiewa River, adjacent to East Bandiana;
- Consumption of eggs from home raised poultry watered with extracted groundwater – boundary of East Bandiana and Jack in the Box Creek catchment;
- Consumption of home grown produce (vegetables and eggs) irrigated with extracted surface water – floodplain of the Kiewa River adjacent to East Bandiana and Jack in the Box Creek;
- Consumption of home grown produce (vegetables) irrigated with extracted groundwater – floodplain of the Kiewa River adjacent to the southern portion of East Bandiana; and
- Incidental ingestion of surface water during recreational activities – floodplain of the Kiewa River adjacent to East Bandiana.

With PFAS concentrations in groundwater and surface water identified as part of the recent JBS&G investigation (i.e. DSI Addendum and Mass Flux Study) being similar to those previously taken into consideration in the HHERA (Golder 2020), there is considered to be no change to the status of the above identified unrealised exposure pathways. Furthermore, Defence has planned remedial works commencing in 2025 that will consist of remediation of Source Areas across South and East Bandiana as well as groundwater remedial works, also in East Bandiana. These works will in time contribute to reductions of PFAS concentrations in the Management Area, which will further reduce the risks highlighted in the section above.

4. OMP Scope and Sampling

4.1 Overview

This OMR reviews the sampling completed by Stantec during five OMP sampling events, specifically November 2021, May 2022, October 2022, May 2023 and October 2023. All five events were completed as required in the PMAP (Defence 2020) and in accordance with the Sample Analysis Quality Plan (SAQP) (Stantec 2024b)[7], which is provided in **Appendix A**. Exceptions to this have been detailed in **Section 4.4**. Furthermore, Stantec indicate that the OMP work was undertaken in general accordance with the applicable industry standards for a site investigation, with these standards being as follows:

- Australian and New Zealand Guidelines (2018), Australian and New Zealand Guidelines for Fresh and Marine Water Quality;
- Australian Standard AS 4482 (2005) *Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soils, Part 1 - Non-volatile and semi-volatile compounds* (noting that this standard has been withdrawn, however remains part of the state of knowledge);
- Department of Defence (2021), *Contamination Management Manual (DCMM)*, March 2018, amended June 2021;
- Department of Defence (2019), Pollution Prevention Management Manual – Annex 1L: Pollution Prevention Guideline - Routine Water Quality Monitoring;
- Department of Defence (2018), Quality System Manual Schedule B15 USEPA DQO Process;
- EPA Victoria (2022), Groundwater Sampling Guidelines, Publication 669.1, February 2022;
- EPA Victoria (2009), Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication IWRG701, June 2009;
- Heads of Environmental Protection Authority's Australia and New Zealand (HEPA) (2020), *PFAS National Environmental Management Plan (NEMP) Version 2.0*, January 2020;
- National Environment Protection Council (NEPC) (2013), National Environmental Protection (Assessment of Site Contamination) Measure (1999, as amended 2013) (ASC NEPM);
- National Health and Medical Research Council (NHMRC), (2019), Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water, August 2019;
- Standards Australia (1998), AS/NZ 5667:1998, Water quality – Sampling;
- U.S. Environmental Protection Agency (USEPA), (2006), Guidance for the Data Quality Objectives Process (EPA QA/G-4); and
- USEPA, (2002), Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8).

4.2 OMP Sampling Requirements

4.2.1 OMP Sampling Locations

The OMP sampling requirements are detailed in the PMAP (Defence 2020). **Table 4.1** provides a list of groundwater, surface water and sediment sampling locations which are to be completed during each sampling event, along with the reasoning for the position of each sample location in the context of the overall program and the base. In total, 44 groundwater wells, 53 surface water locations and 12 sediment locations are sampled

[7] *PFAS OMP Sampling and Analysis Quality Plan (SAQP), Bandiana Military Area*. Stantec Pty Ltd. 28 March 2024. (Stantec 2024b).

as part of the OMP, although the number of locations sampled depends on season. Groundwater sample locations are provided in **Figure 4**, while surface water and sediment locations are provided in **Figure 5A** and **5B**.

Table 4.1: OMP Sampling Locations as per PMAP (Defence 2020)

Catchment	Surface Water (Bi-Annual)	Sediment (Annual)	Groundwater		Target Area	Justification
			Annual	Bi-annual		
On-base Locations						
Jack in the Box Creek	SW302, SW307, SW310		MW315, MW317 MW318		South Bandiana, on-base, Source Area 2	Locations targeting surface water and groundwater within and downgradient of the Source Area.
	SW311, SW313, SW316, SW321		MW304, MW307, MW311		South Bandiana, on-base, Source Area 1	Locations target surface water and groundwater within and downgradient of the Source Area. SW311 and MW304 is the point of discharge off-base into Jack in the Box Creek.
	SW322		MW312		South Bandiana, on-base	SW322 and MW312 is a point of discharge off-base into Jack in the Box Creek. The point is also at the confluence of surface water drainage from Source Areas 1, 2, 5, 6 and 7.
	SW323	SD323			South Bandiana, on-base	This point represents the confluence of drainage from Source Areas 5, 6 and 7 and depositional environment prior to discharging off-base.
	SW324, SW326, SW332, SW336		MW051[1], MW326/MW416[2], MW323		South Bandiana, on-base, Source Area 6	Locations target surface water and groundwater discharge from Source Area 6. SW336 is located within the Fire Training Area settling pond. SW324 and SW332 target two different flow paths from the Source Area.
	SW333, SW338		MW329		South Bandiana, on-base, Source Area 5	Locations target surface water and groundwater discharge from Source Area 5. SW333 targets discharge to Jack in the Box Creek. SW338 is the large pond within the Source Area. SW340 targets discharge to the Kiewa River.
Kiewa River	SW340					
Jack in the Box Creek	SW448		MW319, MW321		South Bandiana, on-base, Source Area 7	Locations target surface water and groundwater discharge from Source Area 7.
Kiewa River	SW346, SW349, SW355	SD346, SD355	MW056[3]		South Bandiana, on-base, Source Area 9 and Stormwater Ponds (wetlands)	MW056 targets perched groundwater identified within Source Area 9. Surface water locations are targeting discharge into, within and discharging from the South Bandiana Stormwater Ponds.
	SW370, SW374, SW375	SD375	MW342	MW345, MW346	North Bandiana, on-base, Source Areas 10, 11 and 12	SW370 is within the unnamed creek, targeting contributions from Source Areas 10, 11 and 12. MW342 targets Source Area 12. MW345 is within the shallow Fluvium where potential groundwater/surface water interactions may be occurring. SW375, SD375 and MW346 is the point of discharge off the Site.
	SW379, SW380			MW052[4], MW403[5], MW404[6], MW350_S, MW350_D, MW009, MW016, MW042, MW043, MW035, MW034, MW046[7], MW047[7], MW018, MW020, MW012, MW029, MW352, MW353, MW354	East Bandiana, on-base, Source Area 13, 14 and 15	Locations are targeting surface water discharge from Source Area 13. The groundwater locations are targeting the East Bandiana groundwater plume, which is emanating from Source Area 13 and discharges off-base across the eastern site boundary.
	SW382, SW387, SW388	SD382		MW351	East-Bandiana, on-base	Locations are targeting the points of discharge from East Bandiana into the Kiewa River and floodplain. MW351 targets the downgradient boundary adjacent to the residential properties.
Off-base Locations						
Jack in the Box Creek	SW424, SW463	SD424, SD463	MW313		Upper Jack in the Box Creek	Locations are targeting publicly accessible open space land use areas where yabby trapping occurs. MW313 targets the residential estate located beyond the South Bandiana boundary. Groundwater monitoring locations represent potential human health exposure, as it targets the residential estate located beyond the South Bandiana boundary where a number of groundwater bores with unknown use were identified in the DSI (Golder 2018).
	SW427			MW360	Lower Jack in the Box Creek	SW427 is located where the creek passes near sensitive land use areas (i.e. a child care centre) where sensitive receptors such as children could be exposed. MW360 is located within the Fluvium where elevated concentrations were identified and where potential groundwater/surface water interactions may be occurring.
	SW430			MW361		MW361 is located within the fluvium where elevated concentrations were reported. SW430 is in proximity to groundwater well (MW361) to allow assessment of groundwater/surface water interactions.

©JBS&G Australia Pty Ltd

Catchment	Surface Water (Bi-Annual)	Sediment (Annual)	Groundwater		Target Area	Justification
			Annual	Bi-annual		
	SW431					SW431 is located where flood diversion structures are located and if used may results in the release of water into Wodonga Creek upgradient of the North East Water abstraction point.
	SW432					SW432 is located downgradient of several off-base sources identified within the DSI (Golder 2018).
	SW434				Jack in the Box and Wodonga Creek confluence	SW434 is located at the confluence of Jack in the Box Creek and Wodonga Creek and represents the downgradient point of monitoring within the Management Area within the Jack in the Box Creek catchment.
Kiewa River	SW409				Unnamed creek	SW409 is located where the unnamed creek passes near sensitive land use areas (i.e. Henrika Kuljurgies Reserve and surrounding Killara residential properties) where sensitive receptors such as residents may be present.
	SW403, SW405, SW412, SW462	SD412		MW357	Unnamed creek and Kiewa River oxbows	Locations SW403 and SW405 are oxbow lakes within the Central Pastoral area and SW412 and SW462 are where the unnamed creek passes through the Northern and Central Pastoral Areas. The HHERA (Golder 2020) identified potential unacceptable human health risks associated with the consumption of carp from within the unnamed creek. SW462 and MW357 are at the point where the unnamed creek discharges into the Kiewa River. SD412 is a depositional environment within the unnamed creek on the Kiewa River floodplain.
	SW395, SW396, SW397, SW400, SW401, SW470, SW471, SW487	SD395, SD396, SD397, SD400		OTH019	Kiewa River oxbows	Locations are oxbow lakes located on the Kiewa River floodplain within the Southern Pastoral Area. Groundwater location OTH019 represents point of potential human health exposure where bore water is used for irrigation of home grown produce and drinking water for chickens. SW487 is targeting seepage water, where groundwater seeps were identified at the Kiewa River floodplain during the HHERA (Golder 2020). MW356 targets the assessment of groundwater/surface water interactions at the Kiewa River.
	SW390				Kiewa River – main channel	SW390 is the Kiewa River background location and represents conditions upstream of the Baranduda Water Treatment Plant (WTP) and Middle Creek.
	SW393				Middle Creek	SW393 is located within Middle Creek and represents potential contributions from the Middle Creek catchment. The HHERA (Golder 2020) identified potential unacceptable human health risks associated with the consumption of carp from within the Middle Creek.
	SW398, SW404			MW356	Kiewa River – main channel	Locations are within the Kiewa River main channel and represents conditions downgradient of the on-base discharges and where recreational activities commonly occur within the river. MW356 targets the assessment of groundwater/surface water interactions at the Kiewa River.
	SW416					SW416 is located within the main Kiewa River channel at the point of confluence with the unnamed creek where recreational activities commonly occur within the river and represents the downgradient point of monitoring within the Management Area and within the Kiewa River catchment.

Notes

1. Monitoring well MW051 was previous identified as MW04 within the PMAP (Defence 2020). MW051 is the current Defence labelling for this well and will be adopted for the purposes of this report.
2. In April 2023, MW326 was replaced by a new groundwater monitoring well MW416 in the same location
3. Monitoring well MW056 was previous identified as BH111 within the PMAP (Defence 2020). MW056 is the current Defence labelling for this well and will be adopted for the purposes of this report.
4. Monitoring well MW052 was previous identified as MW06-a within the PMAP (Defence 2020). MW052 is the current Defence labelling for this well and will be adopted for the purposes of this report.
5. Monitoring well MW403 was previous identified as BH1 within the PMAP (Defence 2020). MW403 is the current Defence labelling for this well and will be adopted for the purposes of this report.
6. Monitoring well MW404 was previous identified as BH2 within the PMAP (Defence 2020). MW404 is the current Defence labelling for this well and will be adopted for the purposes of this report.
7. Monitoring wells identified within the PMAP (Defence 2020) as MW046 and MW047, have been identified as MW046_I and MW046_D respectively during Stantec sampling events. MW046_I and MW046_D will be the sample locations adopted for the purposes of this report.
8. It should be noted that groundwater monitoring wells MW325 and MW328 within Source Area 6 on South Bandiana have been sampled during the October 2022 sampling event in lieu of MW326 which could not be sampled owing to a blockage.

©JBS&G Australia Pty Ltd

4.2.2 Groundwater Sample Locations

As detailed previously in **Section 4.2.1**, a total of 44 groundwater monitoring wells are sampled across the base and the Management Area as part of the OMP. As discussed in **Section 2**, multiple geological units are present across the base. In general groundwater wells within the Jack in the Box Creek catchment, on the western side of the base, are within the Shepparton Colluvium, while wells within the Kiewa River catchment, on the eastern side of the base, are within the Shepparton Fluvium and Coonambidgal Fluvium.

A review of the OMP groundwater wells has been completed, particularly in light of the further aquifer information obtained across East Bandiana as part of the DSI Addendum (JBS&G 2024a). A summary of the groundwater wells and their respective well screen and wells depths have been provided in **Appendix B**. Based on this information, the OMP wells have been divided into relevant aquifers/screened intervals, as summarised in **Table 4.2.**

It is noted that OTH019 is groundwater sampled from a private bore off-base. The well however is not directly accessed during OMP sampling events (rather a sample is collected from a tap, the water of which is extracted groundwater that is understood to be held in an above ground storage tank) and the construction details of the well are unknown. As such, this sample location has not been assigned an aquifer.

Table 4.2: OMP Sampled Wells vs. Aquifers

Geological Unit	Aquifer Interval	Aquifer Depth (mbgl)	OMP Wells
Shepparton Colluvium	Shallow 'S'	Variable, based on position on-base. Identified between approximately 5.0 and 42 mbgl	MW051, MW304, MW307, MW311, MW312, MW313, MW315, MW317, MW318, MW319, MW321, MW323, MW325, MW326, MW328, MW329, MW342, MW360, MW361, MW416
Shepparton Fluvium and Coonambidgal Fluvium	Shallow 'S'	5.0-10.0	MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW043, MW052, MW345, MW346, MW350_S, MW351, MW352, MW353, MW354, MW356, MW357, MW403, MW404
	Intermediate 'I'	10.0-15.0	MW009, MW042, MW046_I
	Deep 'D'	>15.0	MW046_D, MW350_D
Perched Water	-	Approximately 3.0	MW056

The geological units and the aquifer intervals are discussed throughout the balance of this report, with key outcomes such as results and groundwater flow contours discussed in the context of their respective aquifer.

4.3 Stantec Sampling Event Summary

As indicated throughout this document, this OMR summarises results from five OMP sampling events, which has been detailed in the following **Table 4.3**.

Table 4.3: OMP Sampling Event Summary

Sample Event	Sampling Period	Locations Sampled As Part of Event	Deviations from OMP SAQP[1]	Stantec Factual Report
E1	8 to 17 November and 22 December 2021	42 groundwater sample locations and 53 surface water sample locations.	Yes	Provided in **Appendix C**.
E2	2 to 9 May 2022	32 groundwater sample locations, 42 surface water sample locations and 12 sediment sample locations.	Yes	Provided in **Appendix D**.
E3	10 to 15 October and 10 November 2022	41 groundwater sample locations and 52 surface water sample locations.	Yes	Provided in **Appendix E**.
E4	1 to 6 May 2023	33 groundwater sample locations, 49 surface water sample locations and 12 sediment sample locations.	Yes	Provided in **Appendix F**.
E5	23 to 27 October and 27 to 28 November 2023	41 groundwater sample locations and 44 surface water sample locations	Yes	Provided in **Appendix G**.

Note:

1. Deviations from the OMP SAQP have been summarised and discussed in the section below.

4.4 Deviations from OMP SAQP

Deviations are not uncommon for reasons of weather conditions, access and safety concerns that inhibit the ability to collect some samples at particular locations. **Table 4.4** provides a summary of these concerns during the reporting period and a summary of the impact on the program. Full detail of deviations for each event, as detailed in the Stantec Factual Reports, has been provided in **Appendix H**.

Table 4.4: Deviations from OMP SAQP Summary

Sample Event	Number of Samples Not Collected	Number of Deviations	Summary of Deviations and Impact on Program
E1	Groundwater – 2 Surface water – 1	Groundwater – 7 Surface water – 1	Deviations relate to alternative sampling methods or locations not being sampled owing to a lack of water. The alternative sampling methods did not produce significantly different results compared to the existing data set. For locations that could not be sampled, results were available further downgradient or from previous sampling events.
E2	Groundwater – 0 Surface water – 10 Sediment – 0	Groundwater – 1 Surface water – 10 Sediment – 0	Deviations relate to an alternative sampling method for OTH019, surface water locations not being sampled owing to a lack of water, or the resampling of surface water locations during a second base visit post rain. The alternative sampling methods for OTH019 is considered appropriate as it is consistent across the OMP sampling events. For locations that could not be sampled, results were available further downgradient, from previous sampling events or sampled during the second base trip.
E3	Groundwater – 5 Surface water – 1	Groundwater – 8 Surface water – 3	Deviations relate to alternative sampling methods for OTH019, data loss, inaccessibility to sampling locations owing to flooding or locations not being sampled owing to a lack of water. The alternative sampling methods for OTH019 is considered appropriate as it is consistent across the OMP sampling events. Efforts were made to re-access and sample locations which were previously blocked by flooding. For the

Sample Event	Number of Samples Not Collected	Number of Deviations	Summary of Deviations and Impact on Program
			majority of locations that could not be sampled, results were available further downgradient, from previous sampling events or sampled during the second base trip.
E4	Groundwater – 0 Surface water – 4 Sediment – 0	Groundwater – 0 Surface water – 4 Sediment – 0	Deviations related to four surface water sample locations not being sampled owing to a lack of water. For these locations, results were available further downgradient or from previous sampling events.
E5	Groundwater – 4 Surface water – 9	Groundwater – 10 Surface water – 11	Deviations relate to resampling of locations owing to new exceedances or unexpected results, sampling of incorrect or non-OMP locations, or locations not being sampled owing to a lack of water. Resampling of new exceedances or unexpected results provided additional data to make an assessment on the validity of the data. For locations that could not be sampled, results were available further downgradient, from previous sampling events or sampled during the second base trip.

Overall, the deviations from the OMP SAQP (Stantec 2024b) are not considered material to the overall program. The data set generated as part of the OMP E1 through E5 has assisted in monitoring changes in PFAS concentrations at BMA and across the PFAS Management Area. Alongside other PFAS investigations completed at the base such as the DSI Addendum (JBS&G 2024a) and the Mass Flux Study (JBS&G 2024b), a comprehensive CSM has been developed which informs the implementation and revision of the PMAP (Defence 2020) risk management actions.

5. Quality Assurance and Quality Control

The Stantec SAQP (2024b) details Quality Assurance and Quality Control (QA/QC) procedures which were implemented across the five sampling rounds between 2021 and 2023 to ensure validation of precision and accuracy. JBS&G note that the program was planned, undertaken and reported based on the seven step Data Quality Objectives (DQO) process outlined in the ASC NEPM. This included data quality indicators and quality assurance and quality control processes that were applied to the conduct of field works undertaken to obtain relevant samples and the data returned from the analytical laboratories for the different media analysed.

An overall data quality review has been completed by Stantec for each sampling event and is detailed in the Factual Reports provided in **Appendix C** through **Appendix G**.

Based on the review completed, the analytical results are considered representative of the concentration of the parameters within the sample media. It is therefore considered that the QA procedures implemented were acceptable in minimising cross contamination during sampling and transportation to the analytical laboratory. Overall, the data collected during the five sampling events is deemed to be suitable for the purposes of the program.

6. Assessment Criteria

Under the Environment Protection Act 2017 (VIC) the Environment Reference Standard (ERS) has been made under Section 93 of the Act, which requires Environmental Values of groundwater to be protected, according to the natural salinity of the groundwater. The groundwater quality across the BMA is classified as Segment A1, A2 and B (according to analysis completed as part of the DSI (Golder 2018) and DSI Addendum (JBS&G 2024a)). Under the ERS, the base is also within the geographic region that falls within the Murray and Western Plains, Rivers and Streams Segment, as such, the applicable Environmental Values have been summarised in **Table 6.1**.

Table 6.1: Groundwater and Surface Water Environmental Values

Environmental Value	Groundwater	Surface Water	Notes
Water Dependent Ecosystems and Species	✓	✓	Slightly to moderately modified applies to surface water
Potable Water Supply (Desirable)	✓	✓	Identified as human consumption after appropriate treatment for surface water
Potable Mineral Water Supply	✓		
Agriculture and Irrigation (Irrigation)	✓	✓	
Agriculture and Irrigation (Stock Watering)	✓		
Human consumption of aquatic foods		✓	
Aquaculture		✓	
Industrial and Commercial	✓	✓	
Water-based Recreation (Primary Contact Recreation)	✓	✓	
Water-based Recreation (Secondary Contact)		✓	
Water-based Recreation (Aesthetic Enjoyment)		✓	
Traditional Owner Cultural Values	✓	✓	
Buildings and Structures	✓		
Geothermal Properties	✓		

An evaluation of groundwater and surface water Environmental Values is presented in **Table 6.2**, which summarises whether they are existing, likely or potential or unlikely for on- and off-base, in accordance with the work completed as part of the DSI (Golder 2018) and the HHERA (Golder 2020). Further details on the assessment of relevant Environmental Values (previously termed Beneficial Uses under the State Environmental Protection Policy (Waters)) can be found in these documents.

Table 6.2: Groundwater and Surface Water Environmental Values On- and Off-Base

Environmental Value	On-Base			Off-Base		
	Existing	Likely/ Potential	Unlikely	Existing	Likely/ Potential	Unlikely
Water Dependent Ecosystems and Species	✓			✓		
Potable Water Supply (Desirable);			✓		✓	
Potable Mineral Water Supply			✓			✓
Agriculture and Irrigation (Irrigation)			✓		✓	
Agriculture and Irrigation (Stock Watering)			✓	✓		
Industrial and Commercial			✓			✓

Environmental Value	On-Base			Off-Base		
	Existing	Likely/ Potential	Unlikely	Existing	Likely/ Potential	Unlikely
Human consumption of aquatic foods			✓	✓		
Aquaculture			✓			✓
Water-based Recreation (Primary Contact Recreation)			✓	✓		
Water-based Recreation (Secondary Contact)		✓		✓		
Water-based Recreation (Aesthetic Enjoyment)	✓			✓		
Traditional Owner Cultural Values	✓			✓		
Buildings and Structures	✓			✓		
Geothermal Properties			✓			✓

Based on the above, the Tier 1 screening criteria that has been adopted for the relevant Environmental Values has been provided in **Table 6.3**.

It should be noted that surface water interacts with groundwater throughout the BMA and in the immediately surrounding area. As such, from a screening perspective, the applicable groundwater criteria will also be applied to surface water for the purposes of this assessment.

Table 6.3: Adopted PFAS Criteria for OMP – Water

Adopted Tier 1 Screening Criteria	Relevant Environmental Value	PFOS/PFHxS	PFOA
Freshwater: High conservation/ecological value systems (99% species protection)	Water Dependent Ecosystems and Species	0.00023 µg/L	19 µg/L
Freshwater: Slightly to moderately disturbed systems (95% species protection)		0.13 µg/L	220 µg/L
Drinking water	Potable Water Supply (Desirable), Traditional Owner Cultural Values, Agriculture and Irrigation (Irrigation and Stock Watering)	0.07 µg/L	0.56 µg/L
Recreational water	Water-based Recreation (Primary Contact Recreation, Secondary Contact, Aesthetic Enjoyment)	2 µg/L	10 µg/L

HEPA (2020) has adopted trigger values or species protection levels for toxicants, which provide guidance for assessment of aquatic ecosystems. Percent species protection levels range from 80% (highly disturbed systems) to 99% (largely unmodified systems). The water bodies on and surrounding the base range in ecosystem disturbance and modification, as such different protection levels apply. The following is a general guide for adopting species protection based on water feature:

- On-base built drainage channel, swale or pipework: No species protection as protection of Environmental Values in artificial stormwater drains is not a requirement;
- On-base stormwater pond, dam or depression: 95% species protection adopted as vegetation is generally present in and around the moderately to highly modified feature which supports a freshwater ecosystem; and
- Off-base water bodies (i.e. rivers, creeks and oxbows): 99% species protection adopted.

For the purposes of this report and as advised in HEPA (2020), the 99% species protection level has been adopted to be protective of bioaccumulation and biomagnification in wildlife (i.e. indirect toxicity), whilst the 95% species protection level is still relevant to direct toxicity for slightly to moderately disturbed ecosystems.

In the absence of a published guideline value for stock watering, the drinking water values have been considered as an initial screening value, as is consistent with the HHERA (Golder 2020).

No criteria have been adopted for the environmental values *Potable Mineral Water Supply*, *Industrial and Commercial*, *Aquaculture*, or *Geothermal Properties*, as these uses are considered unlikely to be present within the Management Area. Additionally, no criteria have been adopted for the environmental value *Buildings and Structures*, as no PFAS criteria have been developed for this scenario.

No ecological or human health guidelines have currently been developed for PFAS in sediments by any Australian Regulatory body and as such, sediment results have not been assessed against criteria during this program.

7. Monitoring Data Summary

The following sections detail the rainfall, groundwater, surface water and sediment monitoring data collected during the five OMP sampling events.

All data has been extracted from the Stantec Factual Reports, full copies of which have been provided in **Appendix C** through **Appendix G**.

7.1 Rainfall

7.1.1 Rainfall During OMR Period (2021 to 2023)

As noted in **Section 2.6**, the average annual rainfall at Wodonga (weather station 082056, approximately 2.7 km to the west) is approximately 710 mm. The annual rainfalls experienced during the OMR period are as follows: 2021 – 832.9 mm, 2022 – 1,140.9 mm and 2023 – 779.6 mm.

Plate 1 below plots the monthly rainfall from 2021 through 2023 against the long-term monthly averages.

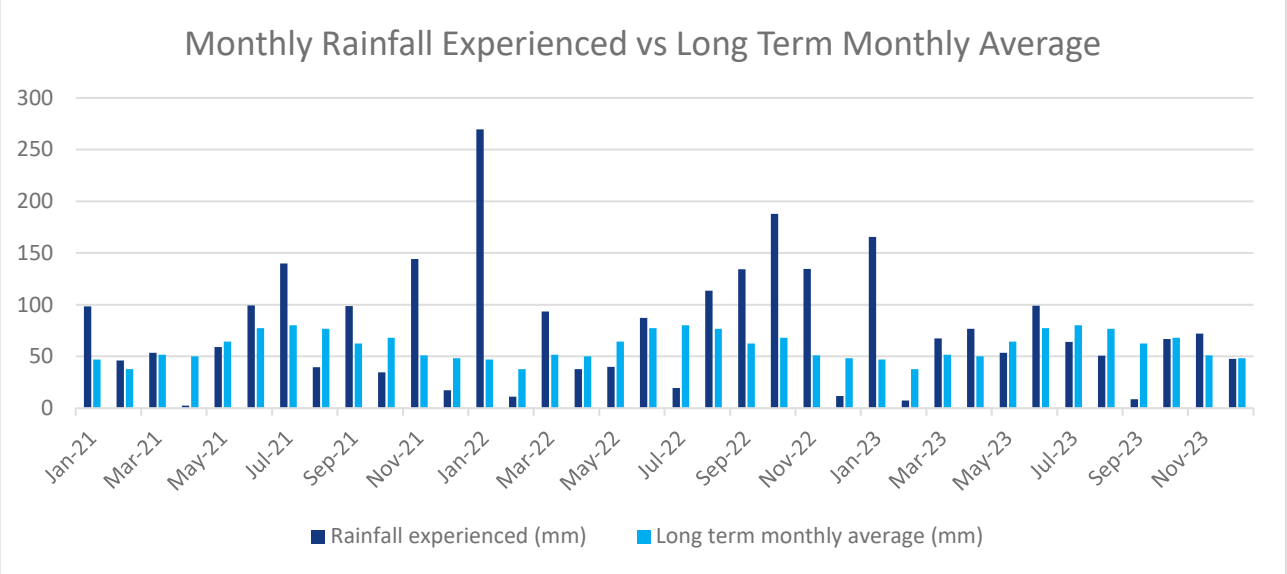


Plate 1: Monthly rainfall experienced vs long term monthly averages (2021-2023).

As shown above, all three years of the OMR recorded above average rainfall, with 2022 being particularly wet. A moderate La Nina weather event, weakening to a weak La Nina during 2023, occurred during this period.

7.1.2 Rainfall During Individual Sampling Events

The PMAP (Defence 2020) recommends that OMP surface water sampling is completed after a reasonable rain event (i.e. 35 mm of rain over a 4-day period) if possible, as many of the water bodies targeted by the OMP are ephemeral. **Table 7.1** below details the rainfall which occurred within the region immediately prior to and during the OMP sampling events.

Table 7.1: Rainfall During Sampling Events

Sample Event	Surface Water Sampling	Rainfall Measurements from Closest Weather Station during Sample Event[1]
E1	8 to 17 November 2021	31.4 mm of rain was recorded in the seven days prior to sampling, with 51.8 mm of rain during the sampling period.
E2	2 to 9 May 2022	9.6 mm of rain was recorded in the seven days prior to sampling, with 1.0 mm of rain during the sampling period.

Sample Event	Surface Water Sampling	Rainfall Measurements from Closest Weather Station during Sample Event[1]
E3	10 to 15 October and 10 November 2022	36.8 mm of rain was recorded in the seven days prior to the sampling in October, with 59.0 mm of rain during the sampling period. 2.6 mm of rain was recorded in the seven days prior to the sampling in November, with no rain during the sampling period.
E4	1 to 6 May 2023	4.4 mm of rain was recorded in the seven days prior to the sampling, with 15.8 mm of rain during the sampling period.
E5	23 to 27 October and 27 to 28 November 2023	No rain was recorded in the seven days prior to the sampling in October, with 0.2 mm of rain during the sampling period. 17.2 mm of rain was recorded in the seven days prior to the sampling in November, with no rain during the sampling period.

Notes:

1. Rainfall measurements were taken from weather station (082056) at Wodonga, the closest BoM station to the base (approximately 2.7 km to the west).

Several of the sampling events were completed during periods of low to no rainfall, with efforts made to return to base following a rain event to complete additional sampling. Weather limitations have contributed to some surface water sampling locations being dry during sample events.

7.2 Groundwater

7.2.1 Groundwater Elevations and Flow Direction

Groundwater elevation contour plots from the five monitoring events are presented in **Figure 6A**, **Figure 7A**, **Figure 8A**, **Figure 9A** and **Figure 10A** respectively. Groundwater flow direction remains relatively consistent across the monitoring period and are also consistent with the expected directions as described in **Section 3.2.2**. Groundwater elevations by aquifer interval for each monitoring round have been summarised in **Table 7.2** and **Table 7.3** below. Overall, the following observations are made in relation to the groundwater contours derived from the monitoring undertaken:

- Shepparton Colluvium – Shallow Wells (South Bandiana and North Bandiana): West and north westerly flow towards Jack in the Box Creek;
- Shepparton and Coonambidgal Fluvium – Shallow Wells (North Bandiana and East Bandiana): North easterly flow towards the Kiewa River; and
- Shepparton and Coonambidgal Fluvium – Intermediate and Deep Wells (North Bandiana and East Bandiana): insufficient wells, or insufficiently spaced wells to prepare flow contours based on OMP data. Groundwater flow direction is known to be to the northeast towards the Kiewa River based on information from the DSI Addendum (JBS&G 2024a) and Mass Flux Study (JBS&G 2024b).

Table 7.2: Summary of Groundwater Elevation – Shepparton Colluvium

Event	Groundwater Elevation Range (m AHD)	
	Perched	Shallow
E1	166.251	151.411 (MW361) to 166.536 (MW342)
E2	*Dry*	151.58 (MW361) to 166.734 (MW342)
E3	166.881	152.171 (MW361) to 168.084 (MW329)
E4	[1]	152.021 (MW361) to 167.315 (MW342)
E5	*Not sampled*	154.069 (MW357) to 165.028 (MW346)

Note:

1. The elevation of 181.368 metres Australian Height Datum (mAHD) has been provided in the contour figure of the Factual Report, however MW056 does not appear on the gauging sheet to cross reference this number. As this elevation is significantly different from other sampling rounds and is well above the surface level at this position of the base, it will not be included in this OMR.

Table 7.3: Summary of Groundwater Elevation – Shepparton and Coonambidgal Fluvium

Event	Groundwater Elevation Range (m AHD)		
	Shallow	Intermediate	Deep
E1	153.648 (MW357) to 164.071 (MW346)	158.866 (MW046_I) to 159.273 (MW009)	158.302 (MW046_D) to 160.383 (MW350_D)
E2	153.377 (MW357) to 163.934 (MW346)	158.821 (MW046_I) to 159.156 (MW009)	158.185 (MW046_D) to 160.297 (MW350_D)
E3	154.966 (MW357) to 165.045 (MW346)	159.506 (MW046_I) to 160.017 (MW009)	158.941 (MW046_D) to 161.478 (MW350_D)
E4	153.359 (MW357) to 163.969 (MW345)	158.912 (MW046_I) to 159.309 (MW009)	158.327 (MW046_D) to 160.238 (MW350_D)
E5	151.944 (MW361) to 167.461 (MW342)	158.968 (MW046_I) to 159.346 (MW009)	158.428 (MW046_D) to 160.534 (MW350_D)

Groundwater elevation measured in the shallow, intermediate and deep wells of the Shepparton and Coonambidgal Fluvium aquifer in East Bandiana had comparable groundwater elevations, demonstrating interconnectivity between the different well intervals. This confirms the observations from groundwater gauging undertaken as part of the DSI Addendum investigation (JBS&G 2024a).

As detailed in **Section 7.1**, rainfall during 2022 was notably higher compared to 2021 and 2023. This increase in rainfall is generally reflected as a rise in groundwater levels across the base during 2022 compared to 2021/2023. This trend was identified in both the Shepparton Colluvium and Shepparton and Coonambidgal Fluvium aquifers, although the influence was observed to be greater in areas where groundwater was close to the surface (central and eastern portions of the base) compared to areas of deeper groundwater (northern and southern portions of the base where topography is more elevated). This relationship and its influence on analytical results has been further discussed in **Section 9.1.2**.

It is noted that based on the current monitoring program, the groundwater flow direction in the shallow Shepparton Colluvium aquifer is difficult to accurately calculate as there is only one well (MW342) monitored in this part of the base. It would be beneficial to include additional North Bandiana wells screened within this geology as part of the OMP program to ensure accurate groundwater flow contours calculation.

7.2.2 Groundwater Physiochemical Field Parameters

An overview of field parameters recorded in groundwater by Stantec as part of the monitoring is summarised in **Table 7.4**, while ranges have been provided in detail in **Appendix I**.

Table 7.4: Overview of Recorded Field Parameters

Aquifer	On-base	Off-base
Shepparton Colluvium Perched	The perched water has neutral pH, poor to good aerobic conditions, fresh water and moderately reducing to anaerobic redox conditions, although it is noted that only two data points are available.	Not monitored off-base.
Shepparton Colluvium Shallow	pH ranges from acidic to alkaline, dissolved oxygen indicates hypoxic to excellent	Off-base conditions have pH range from acidic to neutral, dissolved oxygen

	aerobic conditions, salinity ranges from fresh to saline and anaerobic to oxidising conditions.	indicates hypoxic to poor aerobic conditions, only fresh water conditions are encountered and anaerobic to moderately reducing conditions are present.
Shepparton and Coonambidgal Fluvium Shallow	pH ranges from moderately acidic to neutral, dissolved oxygen indicates hypoxic to good aerobic conditions, salinity ranges from fresh to saline water and anaerobic to oxidising conditions.	Off-base conditions are similar although dissolved oxygen indicates hypoxic to poor aerobic conditions and only fresh conditions are encountered.
Shepparton and Coonambidgal Fluvium Intermediate	This interval is slightly acidic, predominantly hypoxic to poor aerobic conditions, with fresh water conditions and redox conditions ranging from anaerobic to moderately reducing.	Not monitored off-base.
Shepparton and Coonambidgal Fluvium Deep	The deep interval exhibits slightly acidic pH, dissolved oxygen levels are hypoxic to excellent aerobic conditions, with fresh water conditions and redox values ranging from anaerobic to oxidising conditions.	Not monitored off-base.

7.2.3 Laboratory Results

Groundwater analytical results obtained from analysis of groundwater samples obtained by Stantec in the five monitoring rounds have been tabulated in comparison to relevant criteria in T1: OMP Groundwater Analytical Summary Table (2021-2023) – in the **Tables** section of this report, summarised in **Table 7.5** below**.**

It is noted that **Table 7.5** states which wells exceed criteria in each sampling event. Analysis of trends and a discussion of the results in the context of the overall program is provided in **Section 9**.

Table 7.5: Summary of Groundwater Analytical Results Exceedances

Analyte	Conc. Range (ug/L)	Summary of Groundwater Analytical Results
Shepparton Colluvium – Perched – On-base		
PFOS	0.3 to 0.84	• Concentrations at MW056 were reported above the PFAS NEMP 2020 Freshwater (99% and 95% Protection) criterion in both monitoring events.
PFOA	0.04 to 0.15	• No criteria exceedances were identified for PFOA.
Sum of PFHxS and PFOS	0.53 to 1.50	• Concentrations at MW056 were reported above the PFAS NEMP 2020 Drinking Water criterion in all monitoring events.
Shepparton Colluvium – Shallow – On-base		
PFOS	LOR to 983	• Concentration at all locations in all monitoring events were reported above the PFAS NEMP 2020 Freshwater (99% Protection) criterion, although it is acknowledged that concentrations in all events at MW315, MW323 and MW416 and one or more monitoring events for MW051, MW304, MW311 and MW312 were below the LOR; and • Concentration at MW307, MW319, MW321 and MW342 in all monitoring events and MW304 during the October 2022 and May 2023 monitoring events, were reported above the PFAS NEMP 2020 Freshwater (95% Protection) criterion.

Analyte	Conc. Range (ug/L)	Summary of Groundwater Analytical Results
PFOA	LOR to 66	• Concentrations at MW307 during all monitoring events except October 2022, were reported above the PFAS NEMP 2020 Freshwater (99% Protection) criterion; • Concentrations at MW307 during all monitoring events except October 2022 and MW321 during the October/November 2023 sampling event, were reported above the PFAS NEMP 2020 Recreational Water criterion; and • Concentrations at MW307 during all monitoring events and MW321 during the October/November 2023 sampling event, were reported above the PFAS NEMP 2020 Drinking Water criterion.
Sum of PFHxS and PFOS	LOR to 1,180	• Concentrations at MW307 and MW342 during all sampling events and MW321 during the October/November 2023 sampling event, were reported above the PFAS NEMP 2020 Recreational Water criterion; and • Concentrations at MW307, MW312, MW319, MW321, MW326, MW328, MW329, MW342 during all monitoring events and MW051 and MW304 during one or more monitoring events, were reported above the PFAS NEMP 2020 Drinking Water criterion.
Shepparton and Coonambidgal Fluvium – Shallow – On-base		
PFOS	LOR to 104	• Concentration at all locations in all monitoring events, were reported above the PFAS NEMP 2020 Freshwater (99% Protection) criterion, although it is acknowledged that concentrations in three monitoring events for MW346 were below the LOR; and • Concentration at all locations in all monitoring events, with the exception of one or more monitoring events for MW012, MW018, MW345, MW346, MW351, MW352 and MW354, were reported above the PFAS NEMP 2020 Freshwater (95% Protection) criterion.
PFOA	LOR to 12.2	• Concentrations at MW404 during May 2023 and Oct 2023 and MW052 during October 2023 (considered an anomaly, based on resampling) were reported above the PFAS NEMP 2020 Recreational Water criterion; • Concentrations at MW350_S, MW403 and MW404 in all monitoring events were reported above the PFAS NEMP 2020 Drinking Water criterion; and • Concentrations at MW035, MW043, MW052 and MW353 in one or more (but not all) monitoring events were reported above the PFAS NEMP 2020 Drinking Water criterion.
Sum of PFHxS and PFOS	LOR to 214	• Concentrations at MW016, MW020, MW035, MW043, MW052, MW350_S, MW353, MW403 and MW404 in all monitoring events and MW034 in the November 2021 and May 2022 monitoring events, were reported above the PFAS NEMP 2020 Recreational Water criterion; and • Concentrations at MW012, MW018, MW029, MW034, MW345 and MW354 in all monitoring events and MW346 in the October 2022 monitoring event, were reported above the PFAS NEMP 2020 Drinking Water criterion.
Shepparton and Coonambidgal Fluvium – Intermediate – On-base		
PFOS	1.54 to 9.98	• Concentration at all locations in all monitoring events were reported above the PFAS NEMP 2020 Freshwater (99% and 95% Protection) criterion.
PFOA	0.05 to 0.71	• The concentration at MW009 in the October 2023 monitoring event was reported above the adopted PFAS NEMP 2020 Drinking Water criterion; and • Concentrations at MW042 in November 2021, May 2022 and October 2022 monitoring events were reported above the adopted PFAS NEMP 2020 Drinking Water criterion.
Sum of PFHxS and PFOS	2.64 to 20.2	• Concentration in all three wells in all monitoring events were reported above the PFAS NEMP 2020 Drinking Water and PFAS NEMP 2020 Recreational Water criterion.
Shepparton and Coonambidgal Fluvium – Deep – On-base		

Analyte	Conc. Range (ug/L)	Summary of Groundwater Analytical Results
PFOS	0.28 to 3.24	• Concentrations at all locations in all monitoring events were reported above the PFAS NEMP 2020 Freshwater (99% and 95% Protection) criterion.
PFOA	0.02 to 0.19	• No criteria exceedances were identified for PFOA.
Sum of PFHxS and PFOS	0.53 to 5.5	• Concentrations at all locations in all monitoring events were reported above the PFAS NEMP 2020 Drinking Water criterion. • Concentrations at MW350_D in all monitoring events were reported above the PFAS NEMP 2020 Recreational Water criterion.
Shepparton Colluvium – Shallow – Off-base		
PFOS	LOR to 0.1	• Concentrations at all locations in all monitoring events were reported above the PFAS NEMP 2020 Freshwater (99% Protection) criterion, although it is acknowledged that concentrations within MW313 during the November 2021 monitoring event were below LOR.
PFOA	LOR to 0.01	• No criteria exceedances were identified for PFOA.
Sum of PFHxS and PFOS	LOR to 0.21	• Concentrations at both MW360 and MW361 in all monitoring events were reported above the PFAS NEMP 2020 Drinking Water criterion.
Shepparton and Coonambidgal Fluvium – Shallow – Off-base		
PFOS	LOR to 0.04	• Concentrations at MW357 in all monitoring events were reported above the PFAS NEMP 2020 Freshwater (99% Protection) criterion, but below 95% Protection.
PFOA	LOR	• No criteria exceedances were identified for PFOA.
Sum of PFHxS and PFOS	LOR to 0.08	• The concentration in MW357 during May 2023 was reported above the PFAS NEMP 2020 Drinking Water criterion.

7.3 Surface Water

7.3.1 Surface Water Quality Field Parameters

Surface water field parameters as recorded by Stantec during the five monitoring rounds reviewed has been summarised in **Appendix I**. The field parameters from the monitoring events during the OMR indicate that:

- On-base pH ranged between 5.97 and 8.96, while off-base pH ranged between 6.01 and 8.43. On-base surface water locations had more acidic conditions than off-base, but were generally comparable;
- On-base DO levels ranged between 1.37 mg/L and 9.74 mg/L, while off-base ranged between 1.29 mg/L and 10.05 mg/L. Off-base locations were similar to on-base DO levels;
- On-base TDS levels ranged between 10.14 mg/L and 466.7 mg/L, while off-base TDS ranged between 18.59 mg/L and 990 mg/L. Off-base locations were similar to on-base TDS levels; and
- On-base and off-base redox conditions were within similar ranges with on-base redox conditions ranging between -161.5 mV and 251.9 mV, while off-base redox conditions ranged between -264.9 mV and 197.3 mV.

7.3.2 Laboratory Results

Surface water analytical results for the five Stantec monitoring rounds have been tabulated in comparison to relevant criteria in T2: OMP Surface Water Analytical Summary Table (2021-2023) in the **Tables** section of this report and is summarised in **Table 7.6** on the following page**.**

Analysis of trends and a discussion of the results in the context of the overall program has been provided in **Section 9**.

Table 7.6: Summary of Surface Water Analytical Results Exceedances

Analyte	Conc. Range (ug/L)	Summary of Groundwater Analytical Results
On-base		
PFOS	LOR to 13.8	• All sample locations during all sampling events were reported above the PFAS NEMP 2020 Freshwater (99% Protection) criterion, although it is acknowledged that concentrations at SW382 were below the LOR; and • SW311, SW313, SW321, SW322, SW323, SW324, SW326, SW336, SW338, SW340, SW346, SW349 and SW448 in all monitoring events and SW307, SW310, SW316, SW332, SW333, SW355, SW370, SW380, SW387 and SW388 in one or more sampling events, were reported above the PFAS NEMP 2020 Freshwater (95% Protection) criterion.
PFOA	LOR to 1.17	• SW336 during the May 2023 and October 2023 monitoring events exceeded PFAS NEMP 2020 Drinking Water criterion.
Sum of PFHxS and PFOS	LOR to 15.9	• SW313 and SW336 in all monitoring events and SW311, SW321, SW322, SW324, SW326, SW332, SW340 and SW448 in one or more monitoring event, were reported above the PFAS NEMP 2020 Recreational Water criterion; and • All sample locations during all sampling events, with the exception of SW332, SW374, SW375, SW382 and SW387 during one or more monitoring events, were reported above the PFAS NEMP 2020 Drinking Water criterion.
Off-base		
PFOS	LOR to 4.13	• All sample locations during all sampling events, were reported above the PFAS NEMP 2020 Freshwater (99% Protection) criterion, although it is acknowledged that concentrations at SW390, SW393, SW398, SW404, SW416, SW430, SW434 and SW462 were below the LOR; and • SW396, SW397, SW400, SW424, SW463, SW471 and SW487 in all monitoring events and SW379, SW395, SW401, SW403, SW405, SW427, SW431, SW462 and SW470 in one or more sampling events, were reported above the PFAS NEMP 2020 Freshwater (95% Protection) criterion.
PFOA	LOR to 0.34	• No criteria exceedances were identified for PFOA.
Sum of PFHxS and PFOS	LOR to 8.31	• SW397 and SW487 in all monitoring events and SW396, SW463 and SW471 in one or more monitoring event, were reported above the PFAS NEMP 2020 Recreational Water criterion; and • SW379, SW396, SW397, SW400, SW401, SW424, SW463, SW470, SW471 and SW487 in all monitoring events and SW395, SW398, SW403, SW405, SW409, SW412, SW427, SW430, SW431, SW432 and SW462 in one or more sampling events, were reported above the PFAS NEMP 2020 Drinking Water criterion.

7.4 Sediment

7.4.1 Summary of Field Observations

Based on the two sediment monitoring events in May 2022 and May 2023, the sediment observed on-base is predominantly orange brown to grey brown silty clay or sandy clay with low to high plasticity and generally contained organic matter. The sediment sampled on-base did not report any odours or staining. Based on the field notes, the on-base water bodies were a mix of flowing and stagnant water bodies, and frothing (which can be an indicator of PFAS presence) was generally not identified.

The sediment observed off-base is predominantly low to high plasticity silty clay and sandy clay, varying in colour from dark brown to grey brown and generally contained organic matter. The sediment sampled off-base did not report any odours or staining. The water bodies where samples were collected were a mix of flowing and stagnant water bodies, and frothing was generally not identified.

7.4.2 Laboratory Results

Sediment analytical results for the two Stantec monitoring rounds have been tabulated in T3: OMP Sediment Analytical Summary Table (2021-2023) in the **Tables** section of this report and summarised in **Table 7.7** on the following page**.** The results indicate that:

- The highest PFAS concentrations in sediment were reported for an offsite location;
- The highest on-base concentration was detected in South Bandiana, in the waterway which drains Source Area 6 and 7, before flowing off-base towards Jack in the Box Creek; and
- The highest concentrations off-base were identified in the oxbow lakes in the Kiewa River floodplain, directly east of East Bandiana.

A full review of the analytical results in the context of the overall program has been provided in **Section 9**.

Table 7.7: Summary of Sediment Analytical Results

Monitoring Period	PFOS Concentrations Range (mg/kg)	PFOA Concentrations Range (mg/kg)	Sum of PFOS and PFHxS Concentrations Range (mg/kg)
On-base			
E2	LOR (SD382) to 0.0167 (SD323)	LOR (All)	LOR (SD382) to 0.0173 (SD323)
E4	LOR (Multiple) to 0.0129 (SD323)	LOR (All)	LOR (Multiple) to 0.0137 (SD323)
Off-base			
E2	0.0014 (SD412) to 0.0196 (SD397)	LOR (Multiple) to 0.0004 (SD397)	0.0014 (SD412) to 0.0442 (SD397)
E4	0.002 (SD412) to 0.0666 (SD397)	LOR (Multiple) to 0.0021 (SD397)	0.002 (SD395/SD412) to 0.0861 (SD397)

©JBS&G Australia Pty Ltd

8. Other Data and Information

In the period between 2020 and 2023, Defence engaged consultants to progress other investigations as part of implementation of the PMAP. The following sections outline the works undertaken at the base, that are relevant in providing additional information and data that can assist in interpretation of the OMP results.

8.1 DSI Addendum

8.1.1 Background and Objective

The DSI Addendum (JBS&G 2024a) was completed by JBS&G to gather additional data for the PFAS Source Areas, particularly Source Area 6 in South Bandiana and Source Area 13 in East Bandiana, along with an assessment of PFAS migration pathways to support PMAP Response Actions and to inform a Remedial Action Plan (RAP). The objectives were to further define the extent and mobility of PFAS within specific Source Areas and to characterise migration pathways from these areas to off-base locations.

8.1.2 Soil Results

The investigation identified PFAS concentrations in soil below and immediately around the facility infrastructure at both Source Area 6 and 13, which reduced significantly with distance from the infrastructure. Due to the clayey geology, PFAS primarily occurred within the top 1.0 m of soil at Source Area 6, while a sandier geology at Source Area 13 allowed PFAS to migrate deeper to the extent of soil investigation of 4.0 m. Investigations of Source Area 14 and 15 and the Diffuse Sources within East Bandiana did not identify significant nor wide-spread PFAS impacts.

8.1.3 Surface Water Results

PFAS was also identified around stormwater infrastructure associated with Source Areas 6 and 13. PFAS was found to be readily mobilised from different media (soil, concrete and asphalt, porewater) and was present in surface water runoff. Investigations into drainage infrastructure and topography found direct pathways via surface water from Source Area 6 to Jack in the Box Creek and from Source Area 13 to the oxbows in the Kiewa River floodplain.

8.1.4 East Bandiana Aquifer Characterisation Results

Furthermore, the aquifer characterisation investigation conducted across East Bandiana and the off-base land immediately to the north, identified a zone of sand at a depth of approximately 11-14 mbgl. PFAS concentrations are generally an order of magnitude higher in the sand interval compared to those reported in shallow wells. The sand interval has a relatively high hydraulic conductivity (10-20 m/day) and appears to be generally continuous across East Bandiana although its thickness is variable. Through the use of survey, geochemical and PFAS data, it is considered that this aquifer intercepts the oxbow lakes in the Kiewa River floodplain to the north of the base. This finding was one of the key outcomes for this investigation as it further developed the CSM and updated the previously proposed interconnected sand stringer theory (as identified in the DSI (Golder 2018)).

8.1.5 CSM Update

Through the DSI Addendum (JBS&G 2024a), JBS&G confirmed the key CSM pathway for the migration of PFAS off the base for South and North Bandiana was via surface water. The key migration pathways for East Bandiana were both surface water and groundwater, although, based on previous development work across this portion of the base, it was considered unlikely that significant PFAS mass was migrating via the surface water pathway. This was confirmed as part of the Mass Flux Study (JBS&G 2024b) (see **Section 8.2**).

Overall, PFAS concentrations in soil, sediment, groundwater and surface water at the site were comparable to previous studies (i.e. DSI (Golder 2018) and HHERA (Golder 2020)), with no change in the risk profile for on-

base or off-base receptors. As such, JBS&G did not identify contamination which poses a risk of harm that requires immediate remedial or management responses on base or within the Management Area.

8.1.6 Remedial Response

The DSI Addendum (JBS&G 2024a) indicated that future works should focus on reducing PFAS migration from the base through remediation and/or management, along with ongoing monitoring of PFAS concentrations and land use across the Management Area (to ensure an ongoing low and acceptable risk level). The DSI Addendum (JBS&G 2024a) indicated that an appropriate remedial response to address the PMAP Management Action will likely involve a combination of Source Area and impacted pathway remediation and/or management.

8.2 Mass Flux Assessment

8.2.1 Background and Objective

The Mass Flux Study (JBS&G 2024b) was completed by JBS&G over an approximate twenty-one-month period extending from July 2022 through to April 2024. The primary objective of the Mass Flux Study was to support closing out Action 1 and 2 of the PMAP, although the specific objectives of the investigation included:

- Quantifying the overall annual PFAS mass flux from the base to off-base areas:
    - Via overland flow and the base stormwater network; and
    - Via groundwater flow.
- Further understanding of baseline concentrations of PFAS migrating off-base in order to allow post remediation comparison;
- Further quantify the contribution of PFAS into stormwater and groundwater from Source Areas to inform future implementation of PMAP Actions (i.e. a RAP); and
- Quantify overland flow and stormwater flow during peak flow events and determine the seasonality of PFAS mass flux from the base.

8.2.2 Mass Flux Study Results

Through the completion of the Mass Flux Study, there is now a comprehensive understanding of the pathways through which PFAS discharges off-base and the estimated flux through these pathways. The Mass Flux Study confirmed the CSM pathway findings of the DSI Addendum (JBS&G 2024a), in that the primary off-base PFAS migration pathway for South and North Bandiana was via surface water, while the primary pathway for East Bandiana was via groundwater. This relationship is evident in the estimated mass flux numbers provided in **Table 8.1** below, although it is noted that surface water mass flux is approximately 30% higher than would occur on an average non-La Nina year.

Table 8.1: Estimated Mass Flux Summary

Base Area	Media	Approximate Mass Flux – Sum of PFHxS and PFOS (g/year)	Approximate Mass Flux – Sum of PFAS (g/year)
South Bandiana	Groundwater	<1	<1
	Surface water[1]	362	434
North Bandiana	Groundwater	1	1
	Surface water[2]	338	461
East Bandiana	Groundwater	66	93
	Surface water	2	4
	Sewerage	3	3

Note:

1. Surface water calculations relate only to the western portion of South Bandiana, based on the hydraulic divide that runs through this portion of the base.
2. The surface water exiting from the North Bandiana boundary is a combination of flows from the eastern portion of South Bandiana (see comment above), plus flows from North Bandiana.

It is noted that the Mass Flux Study did not identify a seasonal concentration/flux trend and only slightly higher PFAS concentrations were observed in the 'first flush' samples of the study.

While the Mass Flux Study provided a broader understanding of PFAS movement across the base boundaries, the Study provided further information on a sub-catchment level, highlighting the contributions of individual Source Areas. Both Source Area 1 and Source Area 7 on South Bandiana generated surface water with PFAS concentrations generally an order of magnitude higher downstream from the Source Area, compared to upstream. This indicates that surface PFAS contamination is likely more widespread than previously characterised in the DSI (Golder 2018) and DSI Addendum (JBS&G 2024), and as such, further investigation of these areas is underway.

8.2.3 Remedial Response

The DSI Addendum (JBS&G 2024a) indicated an appropriate remedial response to reduce PFAS migration from the base would likely involve a combination of Source Area and impacted pathway remediation and/or management. The Mass Flux Study (JBS&G 2024b) confirmed this conclusion and assisted in refining the understanding of Source Areas and pathways requiring attention.

9. Discussion

The following section discusses the results of the five OMP sampling events in the context of the observed field and analytical trends and their setting in the broader PMAP program.

The short-term PFAS trends observed are consistent with climatic trends and the current CSM, and therefore statistical trend analysis of the data has not been completed. Whilst statistical trend analysis can provide a robust assessment of long-term trends, they are not suited to assessing short-term fluctuating trends, nor do they consider other factors relevant to the CSM, such as climatic conditions and groundwater level fluctuations.

9.1 Groundwater

9.1.1 Analytical Results Based on Base Conceptual Understanding

Based on the revised CSM (see **Section 3**), groundwater is the primary PFAS migration pathway for East Bandiana and contributes to surface water PFAS concentrations in the oxbow lakes located on the Kiewa River floodplain. However, groundwater is not a key migration pathway for North and South Bandiana, primarily due to the Shepparton Colluvium consisting mainly of clay materials which results in limited vertical and lateral PFAS migration.

A discussion of the OMP results taking into account the revised CSM are set out in **Table 9.1**. Groundwater sampling locations have been grouped by Source Areas/area of interest. Source Areas are shown in **Figure 2**, while groundwater sampling locations are shown in **Figure 4**.

Table 9.1: Interpretation of Groundwater OMR Results

Sample Location/s	Target Area	Monitoring Undertaken	Discussion of Results and Screening Criteria Exceedances	Rationale for Observed Results/Changes
Shepparton Colluvium – Perched – On-base				
MW056	Source Area 9	This sampling location targets the shallow perched water located in Source Area 9. Only two samples have been collected during the five monitoring rounds.	Results have been relatively consistent, ranging from 0.53 to 1.5 µg/L for Sum of PFHxS+PFOS, which exceeds the PFAS NEMP 2020 Drinking Water criterion.	The difference in concentration between sample rounds is not considered to be significant.
Shepparton Colluvium – Shallow – On-base				
MW315, MW317, MW318	Source Area 2	These sample locations target Source Area 2 and only one sample (MW315 in November 2021) has been collected and analysed from the five monitoring events covered in this OMR as the wells have been consistently dry.	The result from this sample was below the LOR. Downgradient wells from Source Area 2 have been sampled and analysed (MW313, approximately 200 m to the northwest) which identified PFAS concentrations just above LOR.	Source Area 2 is located in an elevated position on the slopes of Bears Hill, as such, groundwater is at considerable depth at this location (approximately 42 mbgl). Based on the single result, the limited PFAS in soil within this Source Area has not migrated through soil to groundwater. These results confirm the results of the Mass Flux Study (JBS&G 2024b) that surface water and not groundwater, is the primary pathway for this portion of South Bandiana.
MW311, MW304, MW307	Source Area 1	Monitoring wells MW307 and MW311 are located within Source Area 1, with MW304 being located further north and represents groundwater leaving the base to the north.	The analytical results have been relatively consistent across the five OMR sampling rounds, with the exception of MW307 which had two sample rounds slightly different in the latter two years. • MW307 results ranged from 72 to 950 µg/L for Sum of PFHxS+PFOS (all exceeding PFAS NEMP 2020 Recreational Water criterion); • MW304 results range from below LOR to 0.62 µg/L for Sum of PFHxS+PFOS (primarily exceeding PFAS NEMP 2020 Drinking Water criterion); • MW311 ranged from below LOR to 0.04 µg/L to Sum of PFHxS+PFOS (all results being less than PFAS NEMP 2020 Recreational and Drinking Water criteria).	MW307 is located immediately adjacent a bund which the DSI (Golder 2018) identifies was formerly used for firefighting activities. The highest PFAS in soil concentrations within Source Area 1 are also in the vicinity of this well. Based on the findings of the Mass Flux Study (JBS&G 2024b), further soil characterisation works are being undertaken across Source Area 1. MW304 is located directly down hydraulic gradient from MW307 and there is an approximate four orders of magnitude reduction in PFAS concentrations over the 260 m between the two locations. A slight increase has occurred for PFAS at MW304 although the most recent result was below LOR. Groundwater in the western portion of Source Area 1 (MW311) is characterised by low PFAS concentrations. Considering the elevated concentration in MW307, it is considered the OMP program would benefit from the addition of wells MW302, MW303 and MW305 to assist in delineation of groundwater results in Source Area 1. Proposed new monitoring locations have been shown on **Figure 11A**.
MW051, MW326, MW416, MW323, MW325, MW328	Source Area 6	All sampling locations are positioned within Source Area 6, with the exception of MW323 which is downgradient.	The analytical results have been relatively consistent across the five OMP sampling rounds for these wells, with the exception of MW051, which increased slightly, although the highest Sum of PFHxS+PFOS concentration remains relatively low (0.13 µg/L). Two additional wells, MW326 and MW328, have recorded Sum of PFHxS+PFOS concentrations exceeding the NEMP 2020 Drinking Water criterion, ranging from 0.18 to 0.29 µg/L.	Blocked and unavailable wells have resulted in the sampling of non-OMP wells and the establishment of new wells limiting the number of data points for each location. Monitoring wells MW325 and MW323 are downgradient of the key Source Area infrastructure and have PFAS concentrations below LOR, inferring that lateral migration of PFAS in groundwater is limited, which concurs with the findings of the DSI Addendum (JBS&G 2024a).
MW321, MW319, MW359	Source Area 7	All sampling locations are located on the downgradient boundaries of Source Area 7.	The analytical results have been relatively consistent across the five OMR sampling rounds, with the exception of a significant increase (four orders of magnitude from 0.75 to 1,180 µg/L of Sum of PFHxS+PFOS) in concentrations in MW321 between 2022 and 2023.	As a result of this increase and the findings of the Mass Flux Study (JBS&G 2024b) which identified elevated PFAS in surface water concentrations being generated from Source Area 7, further soil characterisation works are being completed within this area to provide additional context. Prior to the increase, MW321, along with all results from MW319, were relatively consistent and comparable, with results ranging from 0.09 to 0.92 µg/L, all of which exceeded PFAS NEMP 2020 Drinking Water criterion. MW359 was sampled once during the OMR period as a result on the significant PFAS increase in MW321. MW359 is further up hydraulic gradient than MW321 and did not provide any further context for the concentration increase.
MW329	Source Area 5	MW329 is located immediately to the west of Source Area 5.	The analytical results have been relatively consistent across the five OMP sampling rounds. Results ranged between 0.17 and 0.42 µg/L for Sum of PFHxS+PFOS, all of which exceed PFAS NEMP 2020 Drinking Water criterion.	The results confirm that groundwater is not a significant pathway for PFAS migration in this area of the base, consistent with the findings of the DSI (Golder 2018) and the Mass Flux Study (JBS&G 2024b).
MW312	Northern boundary of South Bandiana	MW312 is located on the northern boundary of South Bandiana and provides an indication of groundwater conditions which are leaving the base to the north.	The analytical results have been relatively consistent across the five OMP sampling rounds, although concentrations in 2023 were slightly higher than 2021. Sum of PFHxS+PFOS concentrations ranged from 0.1 to 0.37 µg/L, which exceed PFAS NEMP 2020 Drinking Water criterion.	The results confirm that groundwater is not a significant pathway for PFAS migration in this portion of the base, in line with the findings of the Mass Flux Study (JBS&G 2024b).
MW342	Source Area 12	MW342 is located immediately downgradient of Source Area 12 on North Bandiana.	The analytical results have been relatively consistent across the five OMP sampling rounds. Sum of PFHxS+PFOS concentrations ranged from 4.81 and 13.5 µg/L, all of which exceed PFAS NEMP 2020 Recreational Water criterion.	While the groundwater results are elevated compared to other areas of the base, downgradient and boundary wells have lower or below LOR results, indicating PFAS concentrations are delineated. Based on review of the data, the OMP program would benefit from monitoring of additional groundwater wells which are closer to MW342, other than the current boundary wells. MW343 and MW344 are additional down-gradient wells in closer proximity which could be added to the program that would assist in delineation of the elevated results at MW342. The inclusion of these wells would also assist is providing

©JBS&G Australia Pty Ltd

Sample Location/s	Target Area	Monitoring Undertaken	Discussion of Results and Screening Criteria Exceedances	Rationale for Observed Results/Changes
				sufficient data to calculate groundwater flow direction in this portion of the base. Proposed new monitoring locations have been shown on **Figure 11B.**
Shepparton Colluvium – Shallow – Off-base				
MW313	Western boundary of South Bandiana	MW313 is located close to the western boundary of South Bandiana between the base and Wodonga South. As indicated above, the well is also used to provide downgradient data for the dry wells located in Source Area 2.	Analytical results from MW313 have recorded Sum of PFHxS+PFOS concentrations below LOR, or just above LOR (0.02 µg/L),	Results confirm that PFAS in groundwater is not a significant pathway across this portion of the base boundary.
MW360, MW361	Jack in the Box Creek Catchment	MW360 and MW361 are located along the Jack in the Box Creek alignment, approximately 1.0 km and 2.5 km downgradient from the base boundary respectively and are sampled to assist in understanding potential groundwater/ surface water interactions.	The analytical results have been relatively consistent for both wells across the five OMP sampling rounds, with Sum of PFHxS+PFOS concentrations ranging from 0.11 to 0.21 µg/L, which consistently exceed PFAS NEMP 2020 Drinking Water criterion. There is not a significant difference in PFAS results between the two wells, despite being approximately 1.5 km apart.	The corresponding surface water OMP locations, SW427 and SW430 respectively, record very similar PFAS concentrations to the wells at each location, although the water parameters readings differ.
Shepparton and Coonambidgal Fluvium – Shallow – On-base				
MW345, MW346	Western boundary of North Bandiana	These wells are in the western portion of North Bandiana, with MW346 on the base boundary and MW345 approximately 250 m off-base.	The analytical results have been relatively consistent for MW345 across the five OMP sampling rounds, with Sum of PFHxS+PFOS concentrations ranging from 0.25 to 0.34 µg/L, which all exceed PFAS NEMP 2020 Drinking Water criterion. MW346 had one event (October 2022) that exceeded PFAS NEMP 2020 Drinking Water criterion at 0.17 µg/L for Sum of PFHxS+PFOS, although the other events were just above LOR, or below LOR.	The results confirm that groundwater is not a significant pathway for PFAS migration in this portion of the base, consistent with the findings of the Mass Flux Study (JBS&G 2024b). Based on review of the data, and the PFAS concentrations identified on the base boundary, it is considered beneficial to the OMP program that an additional groundwater well be installed off-base in the proximity of the Killara residential development (MW447, as shown on **Figure 11B**). This would ensure additional data is available to track a PFAS plume in groundwater if it is travelling off-base to the east. With this improved monitoring between the base and the receptor, the sampling frequency of North Bandiana wells MW345 and MW346 can be reduced from biannual to annual.
MW052, MW403, MW404, MW350_S	Source Area 13	The sample locations target Source Area 13.	The analytical results have been relatively consistent for all wells across the five OMP sampling rounds, with Sum of PFHxS+PFOS concentrations ranging from 11.0 to 214.0 µg/L, all of which exceed PFAS NEMP 2020 Recreational Water criterion.	The data identifies that the down gradient wells from the fire station facility (MW403, MW404 and MW350_S) have generally higher concentrations (approximately one order of magnitude) than the upgradient well (MW052). The OMP groundwater and surface water results confirm the current conceptual understanding of Source Area 13, as detailed in the DSI Addendum (JBS&G 2024a) and Mass Flux Study (JBS&G 2024b).
MW353, MW012, MW354. MW029	Groundwater conditions through the central portion of East Bandiana	These wells are located to assist in delineating the PFAS plume from Source Area 13.	MW353 is the most impacted well, with Sum of PFHxS+PFOS concentrations ranging from 4.94 to 18.8 µg/L, with the highest concentrations reported in the 2023 sampling events, which exceed PFAS NEMP 2020 Recreational Water criterion. It is noted that this well is directly downgradient from Source Area 13, and its PFAS concentrations are approximately one to two orders of magnitude lower than reported in the Source Area. MW012 and MW354 are also downgradient to the east of the plume, with MW029 being cross gradient to the south of the Source Area. The analytical results have been relatively consistent for all three wells across the five OMR sampling rounds, with Sum of PFHxS+PFOS concentrations ranging from 0.06 to 1.28 µg/L, the majority of which exceed PFAS NEMP 2020 Drinking Water criterion.	The delineation of the Source Area 13 PFAS plume using the OMP results is similar to the plume layout defined during the DSI Addendum (JSB&G 2024a). The East Bandiana PFAS plume has been well defined as part of the DSI Addendum (JBS&G 2024a), which identified a relatively narrow plume which is largely confined to the top-most aquifer within Source Area 13 that expands laterally and into deeper aquifers by approximately the centre of East Bandiana, then remains relatively consistent until the base boundary. The OMP well results reflect this understanding, with MW353 being close to the centre of the plume, while MW029 and MW354 are located on the southern and eastern edges of the plume respectively.
MW016, MW035, MW043, MW034, MW020, MW018	Groundwater conditions along the north central boundary of East Bandiana	The sample locations are positioned across the northern portion of East Bandiana to assist in downgradient delineation of the Source Area 13 PFAS plume in the shallow zone.	MW016, MW020, MW034, MW035 and MW043 consistently recorded Sum of PFHxS+PFOS concentrations in the range of approximately 2.0 and 17.0 µg/L (depending on their location in the plume), which exceed PFAS NEMP 2020 Recreational Water criterion. MW018, on the eastern edge of the plume, has lower Sum of PFHxS+PFOS concentrations in the range of approximately 0.6 to 0.9 µg/L, which exceeds PFAS NEMP 2020 Drinking Water criterion. Several wells, MW016 and MW035, show slightly increasing trends, while others are stable or have decreased.	Based on the results obtained, which is consistent with the results obtained during the DSI Addendum (JBS&G 2024a), the PFAS plume in shallow wells is broader than in the upgradient plume although concentrations are similar. This is likely to be a result of plume dispersion (due to the distribution of clays and sands in the shallow zone) and/or variable discharge processes within the floodplain area. Based on review of the data, the OMP program would benefit from the inclusion of additional off-base wells to ensure the continued monitoring of this plume further down-gradient of the base boundary. It is considered that the inclusion of MW411 through MW415 would benefit the program. Proposed new monitoring locations have been shown on **Figures 11B.** With this improved monitoring between the base and the receptor, the sampling frequency of all on-base wells across East Bandiana can be reduced from biannual to annual.

©JBS&G Australia Pty Ltd

Sample Location/s	Target Area	Monitoring Undertaken	Discussion of Results and Screening Criteria Exceedances	Rationale for Observed Results/Changes
MW351, MW352	Northwestern boundary of East Bandiana	The wells are located on the northwestern boundary of East Bandiana and identify concentrations flowing towards the Killara residential area. These wells also provide delineation of the Source Area 13 PFAS plume cross gradient to the north.	The analytical results have been consistent across the five OMP sampling rounds, with Sum of PFHxS+PFOS concentrations ranging from 0.01 to 0.05 µg/L, all of which are below PFAS NEMP 2020 Recreational and Drinking Water criteria.	These observations are consistent with the conceptual understanding of this portion of the base. No Source Areas were identified in this area of the base and the PFAS plume from Source Area 13 is located further to the south.
Shepparton and Coonambidgal Fluvium – Intermediate – On-base				
MW009, MW042, MW046_I	Northern boundary of East Bandiana	These wells are intended to assist in delineating the Source Area 13 plume in the intermediate zone of the aquifer.	MW009 and MW042 consistently recorded Sum of PFHxS+PFOS concentrations in the range of approximately 7.0 to 20.0 µg/L, while MW046_I was approximately 2.5 to 5.5 µg/L. All concentrations exceed PFAS NEMP 2020 Recreational Water criterion and were consistent across the five OMR sampling rounds, although the highest concentration was reported at MW009 during October 2023.	The reported concentrations for MW009 and MW042 indicate they are close to the centre of the plume, with MW046_I located to the east with slightly reduced PFAS concentrations. The DSI Addendum (JBS&G 2024a) identified that the intermediate zone at East Bandiana was continuous and generally had higher PFAS concentrations than the shallower aquifer which was dis-continuous in parts. The OMP results are consistent with these conclusions.
Shepparton and Coonambidgal Fluvium – Deep – On-base				
MW350_D	Source Area 13	The sample location is positioned in Source Area 13 to identify PFAS concentrations in the deeper portion of the aquifer.	The analytical results have been consistent across the five OMP sampling rounds, with Sum of PFHxS+PFOS concentration consistently being less than 1.0 µg/L, although exceeding PFAS NEMP 2020 Drinking Water criterion.	The PFAS concentrations in the deep well in Source Area 13 are approximately two orders of magnitude less than those in the shallow well, which is consistent with the findings of the DSI Addendum (JSB&G 2024a) which identified low hydraulic conductivity clay layers between the wells in this portion of the base.
MW046_D	Northern boundary of East Bandiana	The sample location is positioned in the northern portion of East Bandiana and is intended to assist in delineating the PFAS plume in the deep aquifer from Source Area 13.	The analytical results have been relatively consistent across the five OMP sampling rounds, with Sum of PFHxS+PFOS concentration consistently ranging from 2.5 to 5.5 µg/L, which exceeds PFAS NEMP 2020 Recreational Water criterion.	The PFAS concentrations in the deep aquifer are approximately the same as those in the overlying intermediate aquifer, which is consistent with the findings of the DSI Addendum (JSB&G 2024a) which identified interconnection between the aquifers in the northeastern portion of the base.
Shepparton and Coonambidgal Fluvium – Shallow – Off-base				
MW356, MW357	Kiewa River floodplain	The sample locations are positioned along the Kiewa River.	The analytical results have been consistent across the five OMP sampling rounds, with Sum of PFHxS+PFOS concentration consistently being below LOR, or just above LOR. One sample at MW357 during the May 2023 sampling event exceeded PFAS NEMP 2020 Drinking Water criterion with a Sum of PFHxS+PFOS concentration of 0.08 µg/L, although is not considered outside the historical range.	The Kiewa River is a gaining stream (i.e. a waterway which receives groundwater), with the monitoring wells MW356 and MW357 showing very low PFAS concentrations discharging into the river from groundwater. It is noted that sampling of surface water in the Kiewa River at or downgradient of the wells has not identified PFAS concentrations above LOR (refer to **Table 9.2**).
Other Aquifer – Off-base				
OTH019	Private Property	Groundwater location OTH019 represents a point of potential human health exposure in a private property where bore water is used for irrigation of home grown produce and stock (chickens) watering.	The analytical results have been consistent across the five OMP sampling rounds, with Sum of PFHxS+PFOS concentration consistently ranging from 0.13 to 0.22 µg/L, which exceeds PFAS NEMP 2020 Drinking Water criterion.	These concentrations are in the historical range that were taken into consideration as part of the HHERA (Golder 2020) and as such the previously assessed risk level has not changed. Risk Management Actions from the PMAP (Defence 2020) result in regular sampling of this location and ongoing stakeholder engagement with the property owner to ensure that current and potential risks relating to PFAS in groundwater are appropriately managed. Furthermore, with the PMAP program moving into a remediation phase during 2025, PFAS concentrations within the East Bandiana aquifer pathway will be subject to remediation, and therefore PFAS migration into off-base areas via groundwater will be reduced over the long term.

©JBS&G Australia Pty Ltd

With two exceptions (MW307 and MW321), overall, the groundwater results obtained from the five OMP sampling rounds are considered relatively consistent and align with the understanding of the distribution and fate and transport of PFAS in the context of the CSM (as updated following completion of the DSI Addendum (JSB&G 2024a) and the Mass Flux Study (JBS&G 2024b)).

The increases at MW307 (Source Area 1) and MW321 (Source Area 7) are currently being assessed by completion of soil characterisation works. Owing to the proximity of Source Area 1 to the base boundary, alterations will be made to the OMP to ensure that the PFAS plume is adequately monitored, although it is noted significant migration of the plume has not been identified to date. The proposed alteration is the inclusion of additional down-gradient wells from MW307, including MW302, MW303 and MW305, to ensure delineation of the PFAS plume if migration is identified.

Other identified changes to the OMP program which would assist with the program objective include:

- Off-base sampling of existing well (MW411 through MW415) to the east of East Bandiana to characterise the known PFAS plume in off-base areas. With this improved monitoring between the base and the receptor, the sampling frequency of all on-base wells across East Bandiana can be reduced from biannual to annual;
- Off-base monitoring through the provision of a new well (MW447) to the east of North Bandiana to characterise the PFAS plume prior to potentially entering the Killara residential development; and
- Monitor additional wells in North Bandiana (MW343 and MW344) to ensure adequate data is available to calculate groundwater flow contours in this portion of the base, and to delineate elevated groundwater PFAS concentrations in MW342.

Minor PFAS concentration increases and decreases (i.e. generally less than an order of magnitude) have been identified in multiple wells and require ongoing monitoring to determine if there are significant trends and if further action is warranted.

Based on the results, there does not appear to be significant migration or changes to current PFAS plumes across the Management Area, with the exception of the East Bandiana plume originating from Source Area 13 which continues to migrate to the northeast into off-base areas, although the extent (both laterally and vertically) of the plume largely remains consistent with previous investigations. This pathway will be further managed through implementation of the PMAP (Defence 2020) risk management actions (i.e. remediation) and amendment to the OMP.

9.1.2 Analytical Results Based on Weather Conditions

As noted in **Section 7.1**, above average rainfall occurred throughout the OMR period, with very high falls recorded in 2022 resulting in increased groundwater levels across some portions of the base. Standing water level increases between the November 2021 and October 2022 sampling events are summarised below (as metre difference measurements). It should be noted that standing water levels in many wells returned to a similar level to November 2021 by the May or October 2023 sampling rounds.

- **Shepparton Colluvium – Shallow**: 0.00 m in MW051 through to 1.56 m in MW329;
- **Shepparton and Coonambidgal Fluvium – Shallow**: 0.25 m in MW353 through to 1.32 m in MW357;
- **Shepparton and Coonambidgal Fluvium – Intermediate:** 0.64 m in MW046_I through to 0.74 m in MW009; and
- **Shepparton and Coonambidgal Fluvium – Deep:** 3.36 m in MW046_D through to 1.11 m in MW350_D.

While it is acknowledged that several areas of the base have shown slightly increased PFAS concentrations during the 2021-2023 period, the above average rainfall (influenced by La Nina weather conditions) should be considered. Movement of the water table, particularly at levels seen in some wells, may interact with PFAS present in soils above the water table, thus increasing PFAS concentrations in water. Importantly, PFAS is

known to accumulate at the air-water interface and as a result increasing groundwater levels will result in the previously partially saturated vadose zone becoming saturated with a resulting increase in dissolved concentrations. In this circumstance the increase is not due to a new source of contamination or due to interaction with contaminated soil and is a function of the properties of PFAS.

The influence of increased rainfall can also be seen in groundwater water parameters collected as part of the sampling events. Based on the review of the parameter data presented in the Factual Reports and the tables in **Appendix I**, it would appear that some dissolved oxygen measurements are higher and electrical conductivity measurements are lower during E2 and E3, compared to other sampling events, which is considered a result of higher recharge to the groundwater table.

Further monitoring undertaken as part of the OMP will include further comparison of rainfall, standing water levels and PFAS concentrations to assess these influences in future. While above average rainfall was noted in 2022, the limited number of wells where increased PFAS concentrations have been identified, may not persist once weather patterns return to average.

9.2 Surface Water

9.2.1 Analytical Results Based on Base Conceptual Understanding

Surface water has been identified as the primary PFAS migration pathway for North and South Bandiana and the groundwater from East Bandiana is known to daylight and become surface water off-base in the Kiewa River floodplain. As such, surface water sampling as part of the OMP is critical to monitoring PFAS movement across the base and into the Jack in the Box Creek and Kiewa River catchments.

A discussion of the OMP surface water concentrations with respect to the overall program including the CSM developed by the DSI Addendum (JBS&G 2024a) and Mass Flux Study (JBS&G 2024b) are discussed in **Table 9.2.** Surface water sampling locations from the top of the catchment are presented first, followed by those further down the catchment and are presented in groups that target Source Areas or pathways. Surface water sampling locations are shown in **Figure 5A** and **5B**.

Table 9.2: Interpretation of Surface Water OMR Results

Sample Location/s	Target Area	Monitoring Undertaken	Discussion of Results and Screening Criteria Exceedances	Rationale for Observed Results/Changes
Jack in the Box Creek Catchment – On-base				
SW302, SW307, SW310	Source Area 2	These sampling locations target Source Area 2 and the drainage channel which runs beside an internal road before converging with surface water from Source Area 1 and discharging off-base.	None of the sample locations have been sampled in all five sampling events from the OMR, with SW302 not being sampled at all, which is likely related to the steeper topography in this part of the base draining stormwater quickly away. Of the data that was obtained as part of the OMP, PFAS concentrations identified within this sub-catchment are generally consistent across sampling events, with Sum of PFHxS+PFOS concentrations ranging from 0.12 to 0.46 µg/L, which exceed the PFAS NEMP 2020 Drinking Water criterion.	The results obtained as part of the OMP are consistent with those from the Mass Flux Study (JBS&G 2024b), which did not identify Source Area 2 to be a key contributor to flux compared to other Source Areas.
SW321, SW313, SW316, SW311	Source Area 1	These sampling locations target Source Area 1, including the off-base discharge point towards Jack in the Box Creek (SW311).	The analytical results have been relatively consistent across the five OMR sampling rounds, although slight decreasing trends were identified in SW311 and SW316. The majority of sample locations consistently exceed both PFAS NEMP 2020 Recreational and Drinking Water criteria, including at the off-base discharge point (SW311) which had Sum of PFHxS+PFOS concentrations ranging from 0.2 to 2.4 µg/L.	The results obtained as part of the OMP are consistent the Mass Flux Study (JBS&G 2024b), which identified Source Area 1 to be a key contributor of PFAS to surface water, with order of magnitude increases to PFAS concentrations from surface water leaving Source Area 1, compared to surface water further upgradient (i.e. Source Area 2, see results in section above). Based on this observation further investigations are being completed in Source Area 1.
SW336	Source Area 6	SW336 is collected from the Fire Training Area settling pond.	The concentrations from this location consistently exceeding both PFAS NEMP 2020 Recreational and Drinking Water criteria, with Sum of PFHxS+PFOS concentrations ranging from 5.21 to 15.9 µg/L.	The concentrations identified during the OMR sampling period are consistent with concentrations identified during the DSI (Golder 2018). The elevated surface water concentrations identified in Source Area 6 are consistent with the DSI Addendum (JBS&G 2024a), as it is known the facility hardstand contains PFAS which is leached during rainfall and carried into the settling pond via surface water. It is noted however that the Fire Training Area is a closed system, with the base waste contractor pumping out and appropriately disposing the wastewater from the facility.
SW338, SW333	Source Area 5	These sample locations both relate to Source Area 5, with SW338 being located within the pond in the facility, while SW338 targets a drainage channel which flows west towards Jack in the Box Creek.	For the OMR sampling period, all results have consistently exceeded PFAS NEMP 2020 Drinking Water criterion, but less than Recreational criterion. Sum of PFHxS+PFOS concentrations range from 0.13 to 1.31 µg/L.	Results are consistent with historical data from the DSI (Golder 2018).
SW448, SW326, SW332, SW324, SW323, SW322	South Bandiana drainage pathway between Source Areas and base boundary	These sample locations are positioned on the main stormwater channel which collect surface water from Source Area 5, 6 and 7 and drain it towards Jack in the Box Creek. SW322 is representative of water conditions as it leaves base.	For the OMR sampling period, all results from these sampling locations have been relatively consistent with historical results, with the exception of SW326 and SW332. The majority of the sample locations within this sub-catchment exceeded PFAS NEMP 2020 Recreational and Drinking Water criteria, including SW322 on the base boundary.	The results are generally consistent with the findings of the DSI Addendum (JBS&G 2024a) and Mass Flux Study (JBS&G 2024b). These reports identified that both Source Area 6 and 7 are key contributors to PFAS in surface water, which is why elevated concentrations are being observed higher in the catchment (i.e. SW448 and SW326). As the catchment is not large and does not receive water from off-base areas, not a significant amount of dilution occurs across the sub-catchment, which sees PFAS concentrations remaining relatively similar across the sub-catchment. Both SW326 and SW332 reported a significant increase in PFAS concentrations during the OMR period. For SW326, the concentration has ranged from 0.69 µg/L to 10.1 µg/L for Sum of PFHxS+PFOS, with order of magnitude changes in concentration identified on three occasions over five sampling rounds. For SW332, the first three sampling rounds reported concentrations of Sum of PFHxS+PFOS between 0.01 and 0.1 µg/L, which then increased of an order of magnitude to 4.3 µg/L in the final sampling round. JBS&G note that these increases were not identified in the downgradient sample locations during the OMP, which remained consistent with previous rounds. As SW326 and SW332 are located in separate sub-catchments, the cause of the changes in concentration are considered unlikely to be Source Area related and may be the result of climatic and/or flow conditions.
Jack in the Box Creek Catchment – Off-base				
SW463, SW424, SW427	Upper portion of Jack in the Box Creek Catchment	SW463 and SW424 represent conditions immediately off-base in the Jack in the Box Creek catchment, with SW427 being further downstream.	All sampling location results have been relatively consistent across the sampling rounds, with the locations immediately adjacent the base boundary ranging from 0.37 to 2.35 µg/L for Sum of PFHxS+PFOS, while SW427 further downstream ranges between 0.03 and 0.53 µg/L. The majority of results exceed PFAS NEMP 2020 Drinking Water criterion, with one sample from SW463 just exceeding PFAS NEMP 2020 Recreational Water criterion.	The results of SW424 and SW463 are considered consistent with the findings of the Mass Flux Study (JBS&G 2024b) and the knowledge of the Source Areas related to each of the respective sub-catchments. It is observed that SW427 is generally an order of magnitude lower in PFAS concentrations than SW424 and SW463, which is reflective of the distance of this location from the base and dilution in the off-base stormwater system.
SW430, SW431, SW432, SW434	Lower portion of Jack in the Box Creek Catchment	These sampling locations are representative of the lower reaches of Jack in the Box Creek catchment, with SW434 representing the	All sampling location results have been relatively consistent across the sampling rounds, with Sum of PFHxS+PFOS concentrations ranging from below LOR to 0.19 µg/L, which indicates around half of the results just exceeding PFAS NEMP 2020 Drinking Water criterion.	As seen with the samples above (SW424, SW427 and SW463), there is a trend of decreasing PFAS concentrations with distance from the base, with SW434 at the discharge point of the Jack in the Box Creek, having all results below PFAS NEMP 2020 Drinking Water criterion.

©JBS&G Australia Pty Ltd

Sample Location/s	Target Area	Monitoring Undertaken	Discussion of Results and Screening Criteria Exceedances	Rationale for Observed Results/Changes
		confluence between Jack in the Box Creek and Wodonga Creek.		
Kiewa River Catchment – On-base				
SW340	Source Area 5	This sample location represents surface water drainage downgradient of the western portion of Source Area 5.	For the OMR sampling period, results have fluctuated slightly ranging from 0.91 to 5.86 µg/L for Sum of PFHxS+PFOS, however all are below historical results from the DSI (Golder 2018) of 6.80 µg/L during 2017.	The results are consistent with the Mass Flux Study (JBS&G 2024b), which identified that Source Area 5 contributed elevated PFAS concentrations to surface water.
SW346, SW349, SW355	Ornamental ponds along northern boundary of South Bandiana	The three sample locations are positioned in three of the main ornamental ponds located on the main drainage pathway between Source Area 5 and North Bandiana.	For the OMR sampling period, results from these locations have remained consistent, with Sum of PFHxS+PFOS ranging from 0.13 to 1.5 µg/L, which indicate all samples exceed PFAS NEMP 2020 Drinking Water criterion.	A distinct decrease can be seen in the data from the upstream pond (SW346) to the downstream ponds (SW349 and SW355), with almost an order of magnitude change. This is consistent with the findings of the Mass Flux Study (JBS&G 2024b) which identified decreasing surface water concentrations between Source Area 5 and the base boundary.
SW370, SW374, SW375	Main drainage channel of North Bandiana	The three sample locations are positioned along the main drainage channel of North Bandiana (which also collects surface water from South Bandiana), with SW375 representing conditions as water leaves the base.	For the OMR sampling period, results from these locations have remained consistent, with all samples having Sum of PFHxS+PFOS ranging from 0.07 to 0.3 µg/L, which indicate most samples exceed PFAS NEMP 2020 Drinking Water criterion.	Consistent with the findings of the Mass Flux Study (JBS&G 2024b), surface water concentrations have continued to decrease in this area compared to results from further upstream, as no Source Areas which contribute significant PFAS to surface water are located within North Bandiana.
SW379, SW380	Source Area 13	Both sample locations are positioned in surface water drainage locations surrounding Source Area 13.	The presence of surface water to be sampled at these locations has been a challenge during the OMR, with only around half of the planned samples being collected. This is consistent with the findings of the DSI Addendum (JBS&G 2024a) which identified sandy soils in the area which drain water quickly. Of the samples which were collected, results from these locations have remained relatively consistent and in line with historical results, with all Sum of PFHxS+PFOS results ranging from 0.11 to 0.58 µg/L, all of which exceed PFAS NEMP 2020 Drinking Water criterion.	The results are also consistent with the DSI Addendum (JBS&G 2024a) which identified the majority of the Source Area has been developed, resulting in widespread hardstand across the area which prevents significant flux of PFAS into the surface water pathway.
SW382	Sediment pond East Bandiana	SW382 is collected from a stormwater retention basis in the northwestern portion of the base.	For the OMR sampling period, analytical results were consistently below the LOR.	As per the Mass Flux Study (JBS&G 2024b), stormwater is not considered a key PFAS migration pathway for East Bandiana, with the pathway where SW382 is situated on (the western outlet) being the less impacted of the two East Bandiana surface water outlets (the eastern outlet receives stormwater from Source Area 13). This is also the likely reason why SW382 had sampling results which were below the LOR.
SW387, SW388	Eastern drainage pathway from East Bandiana	Both sample locations are positioned on the eastern drainage pathway between East Bandiana and the discharge point at the Kiewa River.	For the OMR sampling period, results from these locations have remained consistent, with Sum of PFHxS+PFOS results ranging from below LOR to 0.48 µg/L, resulting in the majority of samples exceeding PFAS NEMP 2020 Drinking Water criterion.	The results are considered consistent with the DSI Addendum (JBS&G 2024a) and Mass Flux Study (JBS&G 2024b) which did not find surface water to be a primary pathway for PFAS flux for East Bandiana. Furthermore, these documents identified a direct link between this surface water discharge point and surface water at Source Area 13 and it is noted that the concentrations between OMP sample locations from the two areas are comparable.
Kiewa River Catchment – Off-base				
SW409, SW412, SW462	Unnamed creek and associated oxbows – Northern and Central Pastoral areas	These sample locations are positioned along unnamed creek, in and down gradient of the residential development of Killara. The locations receive surface water flow which exists North Bandiana.	All sampling location results have been relatively consistent across the sampling rounds, with Sum of PFHxS+PFOS results ranging from 0.01 to 0.42 µg/L, resulting in just under half of the results just exceeding PFAS NEMP 2020 Drinking Water criterion, with the balance being just below.	Results are in line with historic data from the DSI (Golder 2018). Results from the off-base portion of unnamed creek are at similar concentrations or lower than the results which exist the base at North Bandiana.
SW403, SW405	Oxbows – Central Pastoral area	SW403 and SW405 are sampled from oxbow lakes within the Central Pastoral area.	All sampling location results have been relatively consistent across the sampling rounds, with Sum of PFHxS+PFOS results ranging from 0.04 to 0.95 µg/L, resulting in the majority of results just exceeding PFAS NEMP 2020 Drinking Water criterion.	It is considered likely that these oxbows receive some surface water flow from oxbows in the Southern Pastoral area, resulting in higher PFAS concentrations compared to the immediately adjacent Kiewa River or the neighbouring unnamed creek. Based on the data, it appears that flood water in the area (consistent with field observations) flushed both oxbows during October 2022, as an order of magnitude reduction in PFAS concentrations was identified in both oxbows for this sampling round, which slowly recovered in the following sampling events.
SW395, SW396, SW397, SW400,	Oxbows – Southern Pastoral area	These sampling locations are positioned across the Kiewa River floodplain in the Southern Pastoral area.	For the OMR sampling period, results from these locations have remained relatively consistent, with SW397 and SW487 exhibiting the highest concentrations, Sum of PFHxS+PFOS results ranging from 6.16 to 8.31 µg/L, while the balance of locations ranged from 0.06 to	The results obtained as part of the OMP, are consistent with the conceptual understanding of this area developed through the DSI Addendum (JBS&G 2024a) and the Mass Flux Study (JBS&G 2024b). These documents identified a relatively continuous sandy zone across East Bandiana with elevated PFAS results, which is considered likely to directly intercept the oxbow (SW487 and SW397 samples). This

©JBS&G Australia Pty Ltd

Sample Location/s	Target Area	Monitoring Undertaken	Discussion of Results and Screening Criteria Exceedances	Rationale for Observed Results/Changes
SW401, SW470, SW471, SW487			3.44 µg/L. It is appreciated that the oxbows that these samples are collected from are used for livestock watering, and that the results remain consistent with historic results and assumptions considered as part of the HHERA (Golder 2020). The risk through this exposure pathway therefore remains low and acceptable.	direct pathway is the cause of the PFAS at this oxbow being higher than in other oxbows in the floodplain. While other oxbows are likely to also receive groundwater discharge from this aquifer, the pathway connection is not as significant (i.e. the SW487/SW397 oxbow has been deepened) and the other oxbows are a greater distance from the base boundary, resulting in lower PFAS concentrations.
SW390	Kiewa River – upstream	This location represents background concentrations in the Kiewa River as it is positioned both upgradient of the base and the North East Region Water Corporation WTP.	All results from the OMR sampling period have consistently been below the LOR for this location.	This finding is consistent with the conceptual understanding of the area, with limited to no PFAS sources being known in the up-stream areas of the Kiewa River.
SW393	Middle Creek, close to Kiewa River confluence	SW393 is located within Middle Creek and represents potential contributions from the Middle Creek catchment.	All results from the OMR sampling period have consistently been below the LOR for this location.	This finding is consistent with the conceptual understanding of the area, with limited to no PFAS sources being known in the up-stream areas of Middle Creek.
SW398, SW404, SW416	Kiewa River – Management Area	These sample locations represent the Kiewa River along the length of the waterway which is covered by the Management Area.	All results from the OMR have consistently been below the LOR for all locations, with the exception of SW398 during the October 2022 event, which had a concentration of 0.08 µg/L for Sum of PFHxS+PFOS, which exceeds PFAS NEMP 2020 Drinking Water criterion.	Stantec did not provide comment for the concentration above the LOR in the Factual Report, however recent flooding in the area may have contributed (note the results from SW403 and SW405 above), although this was not identified in any of the other sampling results from the Kiewa River during this time.

©JBS&G Australia Pty Ltd

Surface water results obtained from the five OMP sampling rounds are consistent with expected results, based on the outcomes of the DSI Addendum (JSB&G 2024a) and the Mass Flux Study (JBS&G 2024b). Several minor anomalous results were identified during the OMR period, including SW326, SW332 and SW398, as discussed in detail in **Table 9.2** above. These sample locations should continue to be monitored to see if anomalous results or trends become apparent.

9.2.2 Analytical Results Based on Weather Conditions

As outlined in **Section 4.4** a number of deviations from the SAQP occurred that have resulted in nominated sample locations being missed due to insufficient surface water being present, due to a corresponding lack of rainfall, at the time of the sampling event. As a result, between 1 (sampling event E1) and up to 11 (sampling event E5) surface water locations could not be sampled. Rainfall data and information from the OMP do however confirm that the majority of the waterways located onsite are ephemeral, which is consistent with the findings of the Mass Flux Study (JBS&G 2024b). This trend occurs as the base is close to the top of the watershed, with little to no base flow passing through the base.

As identified previously in **Section 7.1**, above average rainfall occurred throughout the OMR period, with the rainfall experienced in 2022 being significantly higher compared to 2021 and 2023. However, due to the intermittent surface water data from the five OMP sampling events, no clear correlation or pattern was identified between increased rainfall and PFAS concentrations, with the exception of locations affected directly by flood water.

9.2.3 Analytical Results Based on Water Flow

As outlined in **Section 7.1**, the intention is to collect surface water samples during or immediately following rain events so that flowing water can be sampled in water courses, rather than stagnant water which may record higher PFAS concentrations owing to prolonged contact with PFAS containing soils/sediments. These conditions however are not always achievable owing to weather conditions or the quick draining nature of some portions of the base.

The flow rate has been provided on the surface water field data records sheets in the appendix of each Factual Report (see **Appendix C** through **Appendix G**). A review of the data presented identified that the flow in the majority of water ways outside the major creeks and rivers was low during events E1 through E3, and none (or stagnant) for E4 and E5, which is considered consistent with the rainfall data for the seven days prior to the event (see **Table 7.1**). A comparison of the analytical results between no flow and low flow sampling rounds did not indicate a clear correlation or pattern between flow rates and increased PFAS concentrations.

9.3 Sediment

Inclusion of sediment sampling locations within the OMP was to monitor PFAS concentrations in this media at key surface water flow locations to assist in the understanding of potential erosion, migration and deposition of materials from the base. The twelve sediment locations, which are shown in **Figure 5A** and **5B**, were divided into the following key surface water pathways:

- Jack in the Box Creek catchment (on and down gradient from South Bandiana) – SD463, SD323 and SD424;
- Kiewa River catchment (on and down gradient from South Bandiana and North Bandiana) – SD346, SD355, SD375 and SD412; and
- Kiewa River catchment (on and down gradient (i.e. Kiewa River floodplain) from East Bandiana) – SD382, SD400, SD397, SD396, SD395.

The results obtained as part of the OMP works with respect to the overall program including the CSM developed by the DSI Addendum (JBS&G 2024a) and Mass Flux Study (JBS&G 2024b) are discussed in **Table 9.3**. Further context is provided by discussion of the sediment results from the DSI (Golder 2018). Sediment

sampling locations from the top of the surface water catchment are presented first, followed by those further down the catchment.

Table 9.3: Interpretation of Sediment OMR Results

Sample Location/s	Monitoring Locations	Discussion of Results and Rationale for Observed Results/Changes
Jack in the Box Creek catchment (on and down gradient from South Bandiana)		
SD463	SD463 is located on what is considered a critical surface water pathway for PFAS leaving the base, receiving elevated surface water PFAS concentrations from Source Area 1 which generally exceed PFAS NEMP 2020 Recreational Water and Drinking Water criteria, as identified in the Mass Flux Study (JBS&G 2024b).	The sediment sample concentrations recorded at SD463 is considered to reflect this position of being immediately downgradient of Source Area 1, with the Sum of PFHxS+PFOS concentrations of 0.0088 mg/kg (May 2022) and 0.0051 mg/kg (May 2023) being relatively higher than other results from other areas both on and off-base which are located further from Source Areas. The results are consistent with that recorded during the DSI (Golder 2018) with a Sum of PFHxS+PFOS concentration of 0.0056 mg/kg.
SD323	SD323 is located on the base boundary for the drainage pathway which collects surface water from both Source Areas 6 and 7. While surface water concentrations are generally lower at this location compared to SD463, the Mass Flux Study (JBS&G 2024b) still highlights that it is a primary surface water pathway for PFAS.	The sediment sample concentrations recorded at SD323 is considered to reflect this position of receiving surface water flow from key impacted Source Areas, with the Sum of PFHxS+PFOS concentrations of 0.0173 mg/kg (May 2022) and 0.0137 mg/kg (May 2023) being relatively higher than other results from other areas both on and off-base which are located in less critical pathways. The results are slightly lower than that recorded during the DSI (Golder 2018) with a Sum of PFHxS+PFOS concentration of 0.0342 mg/kg.
SD424	SD424 is located further downstream than SD463, but before the confluence with surface water from Source Area 1 (represented by SD323).	The sediment sample concentrations recorded at SD424 were slightly lower than those recorded at SD463, with the Sum of PFHxS+PFOS concentrations of 0.0041 mg/kg (May 2022) and 0.0035 mg/kg (May 2023), which makes sense given its greater distance from Source Areas. It is also noted that SD424 is collected from a concrete culvert, which would likely increase the flow of water and enable sediment to be scoured further downstream rather than accumulating. The results are lower than that recorded during the DSI (Golder 2018) when a Sum of PFHxS+PFOS concentration of 0.0596 mg/kg was obtained.
Kiewa River catchment (on and down gradient from South Bandiana and North Bandiana)		
SD346	SD346 is located immediately downgradient from Source Area 5, another area that the Mass Flux Study (JBS&G 2024b) highlighted as generating elevated surface water PFAS concentrations which generally exceed PFAS NEMP 2020 Recreational Water and Drinking Water criteria.	The sediment sample concentrations recorded at SD463 is considered to reflect this position of being immediately downgradient of Source Area 5, with the Sum of PFHxS+PFOS concentrations of 0.0041 mg/kg (May 2022) and 0.0114 mg/kg (May 2023) being relatively higher than other results from other areas both on and off-base which are located further from Source Areas. The results are consistent with that recorded during the DSI (Golder 2018) with a Sum of PFHxS+PFOS concentration of 0.0161 mg/kg.
SD355	SD355 is located at the end of three ornamental ponds, compared to location SD346 above, which is at the start of the ponds.	The sediment sample concentrations recorded at SD355 were 0.001 mg/kg (May 2022) and 0.0011 mg/kg (May 2023) for Sum of PFHxS+PFOS. It would appear that both surface water and sediment PFAS concentrations are reduced by the presence of the ornamental ponds within the drainage pathway. The results are lower than that recorded during the DSI (Golder 2018) when a Sum of PFHxS+PFOS concentration of 0.0128 mg/kg was obtained.
SD375	SD375 is located at the point where surface water leaves the North Bandiana base.	The sediment sample concentrations recorded at SD375 were 0.0044 mg/kg (May 2022) and 0.0032 mg/kg (May 2023) for Sum of PFHxS+PFOS. While North Bandiana does not have highly impacted Source Areas which could greatly contribute to PFAS surface water concentrations, it does receive surface water from the eastern portion of South Bandiana, which could contribute to slightly higher concentrations than SD355. The results are lower than that recorded during the DSI (Golder 2018) when a Sum of PFHxS+PFOS concentration of 0.0118 mg/kg was obtained.
SD412	SD412 is located close to the end of unnamed creek, east of the residential development of Killara.	The sediment sample concentrations recorded at SD412 were 0.0014 mg/kg (May 2022) and 0.002 mg/kg (May 2023) for Sum of PFHxS+PFOS. As there are no PFAS sources between SD412 and SD375 and the distance between the two sample locations is approximately 1.2 km, it is considered appropriate that the PFAS results are approximately half that of SD375. The results are lower than that recorded during the DSI (Golder 2018) when a Sum of PFHxS+PFOS concentration of 0.0038 mg/kg was obtained.
Kiewa River catchment (on and down gradient (i.e. Kiewa River floodplain) from East Bandiana)		
SD382	SD382 is collected from a stormwater retention basis in the northwestern portion of the base.	Stormwater is not considered a key PFAS migration pathway for East Bandiana, with the pathway what SD382 is situated on (the western outlet) being the lesser impacted pathway of the two East Bandiana surface water outlets (the eastern outlet receives stormwater from Source Area 13). This is the likely reason why SD382 had below LOR concentrations during both May 2022 and May 2023. The results are lower than that recorded during the DSI (Golder 2018) when a Sum of PFHxS+PFOS concentration of 0.0011 mg/kg was obtained.
SD397	SD397 is located in the oxbow that is understood to be in direct connection to the Shepparton and Coonambidgal Fluvium intermediate aquifer and as such generally has the highest PFAS surface water concentration of all of Kiewa River floodplain oxbows.	It is this PFAS surface water presence and the static nature of the water body, that has likely resulted in the Sum of PFHxS+PFOS concentrations of 0.0442 mg/kg (May 2022) and 0.0861 mg/kg (May 2023) being relatively higher than other results from other areas both on and off-base which are located further from Source Areas. The results are consistent with that recorded during the DSI (Golder 2018) with a Sum of PFHxS+PFOS concentration of 0.0527 mg/kg.
SD395, SD396 and SD400	SD395, SD396 and SD400 are located in other oxbows across the Kiewa River floodplain.	These oxbows are not likely connected to groundwater (or at least to the same extent as the oxbow from which SW397 is sampled), although the oxbow which SD400 is collected from receives stormwater from the northern portion of East Bandiana, which has very low levels of PFAS. Concentrations in SD395, SD396 and SD400 are all lower than that seen in SD397, with results as follows: • SD395: Sum of PFHxS+PFOS concentrations of 0.002 mg/kg (May 2023), not sampled in May 2022, and 0.0016 mg/kg and 0.0033 mg/kg during the DSI (Golder 2018) and HHERA (Golder 2020) respectively; • SD396: Sum of PFHxS+PFOS concentrations of 0.0373 mg/kg (May 2022), 0.0223 mg/kg (May 2023), 0.0162 mg/kg during the DSI (Golder 2018) and 0.0545 mg/kg during the HHERA (Golder 2020); and • SD400: Sum of PFHxS+PFOS concentrations of 0.0059-0.0144 mg/kg (May 2022), 0.0193 mg/kg (May 2023), 0.0031 mg/kg during the DSI (Golder 2018) and 0.0092 mg/kg during the HHERA (Golder 2020).

©JBS&G Australia Pty Ltd

Sediment PFAS concentrations within the surface water drainage pathways are representative of their position relative to Source Areas, with higher concentrations identified in areas immediately adjacent Source Areas, or in areas receiving elevated surface water concentrations from Source Areas.

Two sampling rounds for sediment have been included in this OMR from the OMP program and PFAS results between the two rounds are similar. Results from the DSI (Golder 2018) and those available for the HHERA (Golder 2020) are also provided, which were generally slightly higher than those obtained during the OMP program. The years of the DSI and HHERA were years of below average rainfall (with 610.9 mm for 2017 and 338.1 mm for 2019), which indicates there may be some correlation between rainfall and sediment concentrations (i.e. lower rainfalls produce slightly higher PFAS in sediment concentrations).

Similar to surface water, sediment PFAS concentrations tend to decrease with the distance away from the Source Area.

Given that the relationship between PFAS concentrations in media and their position relative to Source Area is better understood and defined by surface water (compared to sediment), and given the significant increase in knowledge in regard to PFAS pathway migration from the base, the continued monitoring of sediment is not considered to bring significant value to the OMP.

10. Potential Implications of OMR for PMAP

The following section provides a discussion of potential implications of the OMP results from 2021 through 2023 on the overall PMAP program, including refinement to the CSM and the risk profile.

10.1 CSM

The current CSM, as detailed in **Section 3,** has been developed based on multiple investigations, with the latest refinement being undertaken as part of the DSI Addendum (JSB&G 2024a) and Mass Flux Study (JBS&G 2024b). The CSM takes into consideration sources, pathways and receptors, each of which have been discussed in the following sections.

10.1.1 Source Areas

The results of the groundwater, surface water and sediment monitoring undertaken and summarised in this OMR did not identify additional Source Areas as listed in **Section 3**.

As detailed throughout this report, the results from the OMR have corroborated the findings of the Mass Flux Study (JBS&G 2024a). This indicates the need for further soil characterisation works within both Source Area 1 and Source Area 7, to provide additional data to inform current groundwater conditions and surface water runoff results.

While there is insufficient OMP data currently available with which to undertake statistical analysis, it was identified that several areas of the base have shown increased PFAS concentrations in both surface water and groundwater, however the changes have not been shown to be material and are generally not greater than an order of magnitude over the five sampling events. It is considered that the above average rainfall experienced in 2022 may have contributed to the trends (particularly for groundwater). With the exception of two locations where PFAS increases have been attributed to the direct influence of identified Source Areas, further monitoring to obtain a statistically valid dataset is required prior to considering the need for any further investigation or additional management actions other than those outlined in the PMAP (Defence 2020).

10.1.2 Pathways

Further investigation of PFAS migration pathways was a primary objective of both the DSI Addendum (JBS&G 2024a) and Mass Flux Study (JBS&G 2024b). As identified throughout this document, these investigations demonstrated that the primary PFAS migrations pathways for North and South Bandiana is surface water, while for East Bandiana it is groundwater. The OMP results discussed as part of this OMR have assisted in confirming the pathways identified under these two assessments. Collectively this corroborates the pathways identified in the updated CSM outlined in **Section 3.2**.

10.1.3 Receptors

No new receptors have been identified as part of preparation of this OMR.

10.1.4 CSM Revision

Based on the above review, it is not considered necessary to update the current CSM. Information provided in **Section 3** is considered accurate and current.

10.2 Risk Profile

With the exception of several surface water and groundwater locations, including MW307 and MW321, the OMP analytical results discussed as part of this OMR were generally within ranges identified and considered in previous PFAS investigations undertaken at the base since 2018. Where PFAS increases have been identified during an OMP event, a review has been completed of the source-pathway-receptor linkage to identify if there has been a material change in risk to on and off-base receptors. No material changes have been identified.

Based on the OMP results and no significant changes to the on-base and surrounding land uses, the risk profile of the identified contamination remains unchanged. It is noted that the Environment Protection Authority Victoria (EPA) has advised against consumption of Carp caught in the Kiewa River between Bakers Land and the Cudgewa-Wodonga Rail Trail, inclusive of the flood plain area bound by Bakers Lane and the Murray Valley Highway. A review of risk will be completed in future OMRs to reflect the results of a Water Use Survey program that Defence are undertaking in targeted area of the Management Area.

In light of the DSI Addendum (JBS&G 2024a), the Mass Flux Study (JBS&G 2024b) and results from this OMR, further monitoring should be completed to assess groundwater immediately off-base to the north of East Bandiana and to the east of North Bandiana, as consistent with the recommendations made throughout this report, and summarised in **Section 11**. Otherwise, based on the results of the OMP monitoring outlined and analysed in this OMR, it is considered that the existing monitoring network is sufficient to continue monitoring of PFAS identified within Source Areas and migration pathways, although it is understood that Defence is currently in the process of reviewing the BMA PMAP and associated OMP, into which the recommendations from this OMR will be incorporated.

11. Conclusions

JBS&G completed a review of the five OMP sampling events conducted by Stantec between 2021 and 2023. Results from these events have been assessed against adopted criteria and reviewed in the context of existing investigations and historical data in order to identify and evaluate:

- Spatial and temporal (including seasonal) variability of PFAS in the environment;
- Changes to PFAS sources, transport pathways and/or receptors for the BMA and wider Management Area;
- Whether risks to human and ecological receptors require review; and
- Whether the identified changes in PFAS concentrations during the OMP trigger an action and/or review.

Based on the review completed, it has been identified that the overall objectives of the OMP have been achieved, with the minor deviations from the SAQP not being identified as material to the program outcomes. The conclusions reached, in accordance with the limitations provided in **Section 12**, have been provided below.

11.1 Groundwater

Groundwater levels were influenced by the above average rainfall experienced during the OMR reporting period, with levels at some wells 1.5 m higher during the 2022 monitoring events compared to 2021 and 2023. This water level change may have contributed to some minor increasing PFAS concentration trends (i.e. generally less than an order of magnitude) in some wells and additional monitoring is required to establish trends during average conditions to determine if further action is warranted.

Groundwater flow directions across the BMA are consistent with the conceptual understanding of groundwater movement from topographically high to topographically low areas. The Shepparton Colluvium shallow aquifer (South Bandiana and North Bandiana) flows in a west and north westerly direction towards Jack in the Box Creek, while the Shepparton and Coonambidgal Fluvium aquifer at East Bandiana flows in a north easterly direction towards the Kiewa River.

The groundwater results from the five OMP sampling rounds are relatively stable and consistent with the outcomes of historical and more recent investigations. PFAS concentrations within the Shepparton Colluvium shallow aquifer, in North and South Bandiana are generally stable with elevated concentrations and detections restricted to the portion of the base in and immediately surrounding the previously identified Source Areas. PFAS concentrations within the Shepparton and Coonambidgal Fluvium aquifers at East Bandiana are also relatively stable, although an PFAS plume is present from Source Area 13 across to the north eastern base boundary, which is consistent with the findings of historical and more recent investigations.

The OMR data, in addition to other investigations on the base, have identified ongoing elevated PFAS concentrations in MW307 in Source Area 1 on South Bandiana and a PFAS concentration increase between 2022 and 2023 in MW321 in Source Area 7, also on South Bandiana. Both areas are currently subject to further soil characterisation works which will assist in further understanding the OMP results.

11.2 Surface Water

The surface water results obtained from the five OMP sampling rounds indicate relatively consistent concentrations and align with the identified Source Areas and their respective pathways to off-base areas. This includes elevated surface water PFAS concentrations associated with select Source Areas (1, 5, 6 and 7) across South Bandiana being transported into Jack in the Box Creek and Kiewa River off-base catchments. The results also confirm that surface water is not the primary migration pathway for East Bandiana, with surface water results in the off-base Kiewa River floodplain considered to primarily be the result of groundwater migration (as per the findings of recent PFAS investigations).

Several anomalous results were identified during the OMR period, including SW326, SW332 and SW398. These sample locations should continue to be monitored to determine the significance of the anomalous results.

Based on the surface water data from the five OMP sampling events, no clear correlation or pattern was identified between above average rainfall and PFAS concentrations.

11.3 Sediment

Sediment PFAS concentrations within surface water drainage pathways are representative of their location relative to Source Areas, with higher concentrations identified in areas immediately adjacent Source Areas/in areas where elevated surface water concentrations are present. Sediment PFAS concentrations tend to decrease with distance from a Source Area.

Given that the relationship between PFAS concentrations in media and their position relative to Source Area is better understood and defined by surface water (compared to sediment), and given the significant increase in knowledge in regard to PFAS pathway migration from the base, the continued monitoring of sediment is not considered to bring significant value to the OMP.

11.4 CSM and Risk Profile Update

The OMP results did not identify any additional Source Areas which had not been previously assessed and no additional transport/exposure pathways or changes to existing pathways have been identified.

The OMP analytical results discussed as part of this OMR were generally within ranges identified and considered in previous investigation reports. Where PFAS increases have been identified during an OMP event, a review has been completed of the source-receptor pathway to identify if there has been a material change in risk to on and off-base receptors. No material changes have been identified.

11.5 Program Triggers or Actions

Based on the assessment completed as part of this OMR it was concluded that the objectives of the OMP have been achieved by the program. The assessment has identified that PFAS concentrations during the 2021 to 2023 period were generally consistent with previous investigation and historic data and as a result there has been no material change in risk to on and off-base receptors.

While the existing monitoring network is sufficient to continue monitoring of PFAS identified within Source Areas and migration pathways, there are several recommended alterations to the OMP monitoring program, including the following:

- Further monitoring of groundwater is recommended immediately off-base to the north of East Bandiana to delineate the known East Bandiana PFAS plume to the oxbow lake closest to the base boundary;
- Owing to the proximity of Source Area 1 to the base boundary and increases in MW307, it is recommended that additional samples be collected to ensure that the monitoring of the potential migration of the PFAS plume;
- The addition of wells in North Bandiana to the program to ensure adequate data is available to calculate groundwater flow contours in this portion of the base, and to delineate elevated groundwater PFAS concentrations recently detected;
- Off-base monitoring through the provision of a new well (MW447) to the east of North Bandiana to characterise the PFAS plume prior to potentially entering the Killara residential development; and
- Discontinuation of sediment sampling as part of the OMP as there are no obvious trends in the data and they do not present a risk to people off-base.

Defence has planned remedial works commencing in 2025 that will consist of remediation of Source Areas across Southern and Eastern Bandiana as well as groundwater remedial works in East Bandiana. These works will in time contribute to reductions of PFAS concentrations in the Management Area however given the size of the area impacted, this will be a slow process. In the meantime, monitoring will continue and advice will be provided to the community to ensure risks presented by PFAS are managed

12. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only and has been based in part on information obtained from the client and other parties. The report has been prepared specifically for the client for the purposes of the commission and no warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. This report should not be amended in any way without prior approval by JBS&G, or reproduced other than in full including all attachments as originally provided to the client by JBS&G.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements or agreed scope of work.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Conditions between sampling locations and media may vary and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

©JBS&G Australia Pty Ltd

13. References

Bandiana Military Area, PFAS Management Area Plan. Document Number 1777738-153-R-RevA. Department of Defence. November 2020. (Defence 2020).

Ongoing Monitoring Program Reporting Guidance Document. Department of Defence. 2024. (Defence 2024).

PFAS Detailed Site Investigation, Bandiana Military Area. Document Number 1777738-081-R-RevB. Golder Associates Pty Ltd. 14 September 2018. (Golder 2018).

Human Health and Ecological Risk Assessment, Bandiana Military Area. Document Number 1777738-150-R-RevB. Golder Associates Pty Ltd. November 2020. (Golder 2020).

PFAS National Environmental Management Plan Version 2.0 – January 2020. Heads of EPAs Australia and New Zealand, Government of Western Australia, Department of Water and Environmental Regulation (HEPA). January 2020. (HEPA 2020).

PFAS Management Area Plan (PMAP) Delivery at Bandiana Military Area, Detailed Site Investigation (DSI) Addendum. Document Number 61395/ 146,407 Rev 1. JBS&G Australia Pty Ltd. 14 June 2024. (JBS&G 2024a).

PFAS Mass Flux Study – PFAS Management Area Plan (PMAP) Delivery at Bandiana Military Area. Document Number 61395/ 153,765 – Draft Rev B. JBS&G Australia Pty Ltd. 6 September 2024. (JBS&G 2024b).

PFAS OMP Factual Report, Biannual Sampling Event November/December 2021, Bandiana Military Area. Stantec Pty Ltd. 12 May 2022. (Stantec 2022a).

PFAS OMP Factual Report, Biannual Sampling Event May 2022, Bandiana Military Area. Stantec Pty Ltd. 20 October 2022. (Stantec 2022b).

PFAS OMP Factual Report, Biannual Sampling Event October/November 2022, Bandiana Military Area. Stantec Pty Ltd. 10 March 2023. (Stantec 2023a).

PFAS OMP Factual Report, Biannual Sampling Event May 2023, Bandiana Military Area. Stantec Pty Ltd. 12 September 2023. (Stantec 2023b).

PFAS OMP Factual Report, Biannual Sampling Event October 2023, Bandiana Military Area. Stantec Pty Ltd. 8 March 2024. (Stantec 2024a).

PFAS OMP Sampling and Analysis Quality Plan (SAQP), Bandiana Military Area. Stantec Pty Ltd. 28 March 2024. (Stantec 2024b).

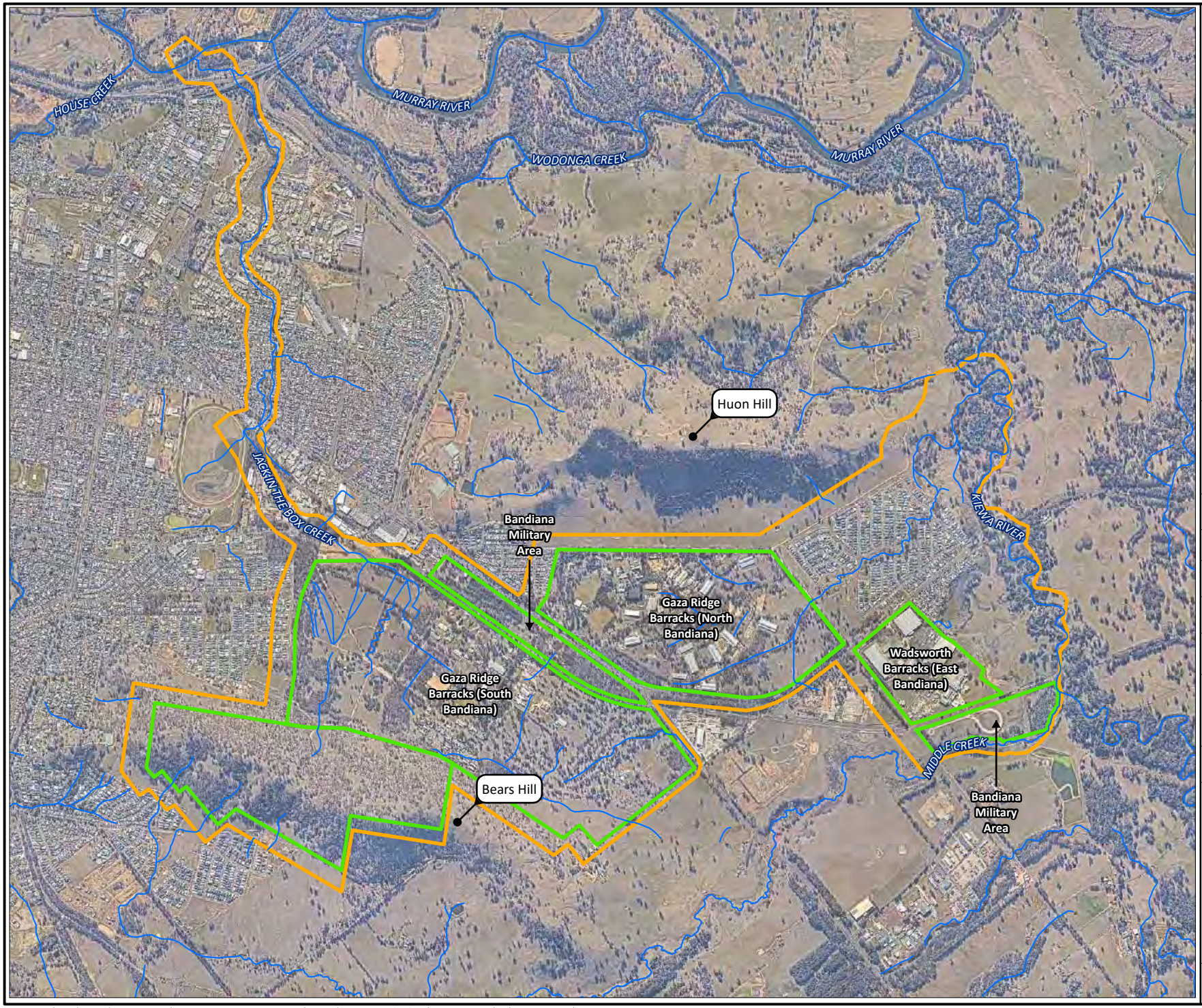
©JBS&G Australia Pty Ltd

Figures

Figures provided include:

- Figure 1: Site Location Plan
- Figure 2: Source Areas
- Figure 3: Surface Water Divide and Pathways
- Figure 4: OMP Groundwater Sample Locations
- Figure 5A/B: OMP Surface Water and Sediment Sample Locations
- Figure 6A: Groundwater Contours (November 2021)
- Figure 6B: Groundwater Sum of PFHxS+PFOS Concentrations (November 2021)
- Figure 6C: Surface Water Sum of PFHxS+PFOS Concentrations (November 2021)
- Figure 7A: Groundwater Contours (May 2022)
- Figure 7B: Groundwater Sum of PFHxS+PFOS Concentrations (May 2022)
- Figure 7C: Surface Water Sum of PFHxS+PFOS Concentrations (May 2022)
- Figure 7D: Sediment Sum of PFHxS+PFOS Concentrations (May 2022)
- Figure 8A: Groundwater Contours (October 2022)
- Figure 8B: Groundwater Sum of PFHxS+PFOS Concentrations (October 2022)
- Figure 8C: Surface Water Sum of PFHxS+PFOS Concentrations (October 2022)
- Figure 9A: Groundwater Contours (May 2023)
- Figure 9B: Groundwater Sum of PFHxS+PFOS Concentrations (May 2023)
- Figure 9C: Surface Water Sum of PFHxS+PFOS Concentrations (May 2023)
- Figure 9D: Sediment Sum of PFHxS+PFOS Concentrations (May 2023)
- Figure 10A: Groundwater Contours (October 2023)
- Figure 10B: Groundwater Sum of PFHxS+PFOS Concentrations (October 2023)
- Figure 10C: Surface Water Sum of PFHxS+PFOS Concentrations (October 2023)
- Figure 11A: Proposed Amended Jack in the Box Creek Catchment OMP Groundwater Monitoring Locations
- Figure 11B: Proposed Amended Kiewa River Catchment OMP Groundwater Monitoring Locations

©JBS&G Australia Pty Ltd



Legend

- Management Area
- Bandiana Military Area
- Watercourse

JBS&G

Job No: 61395	
Client: Department of Defence	
Version: Final	Date: 24-Jan-2025
Drawn By: JStrauss	Checked By: JS
Scale 1:35,000	

0 500 1,000
metres

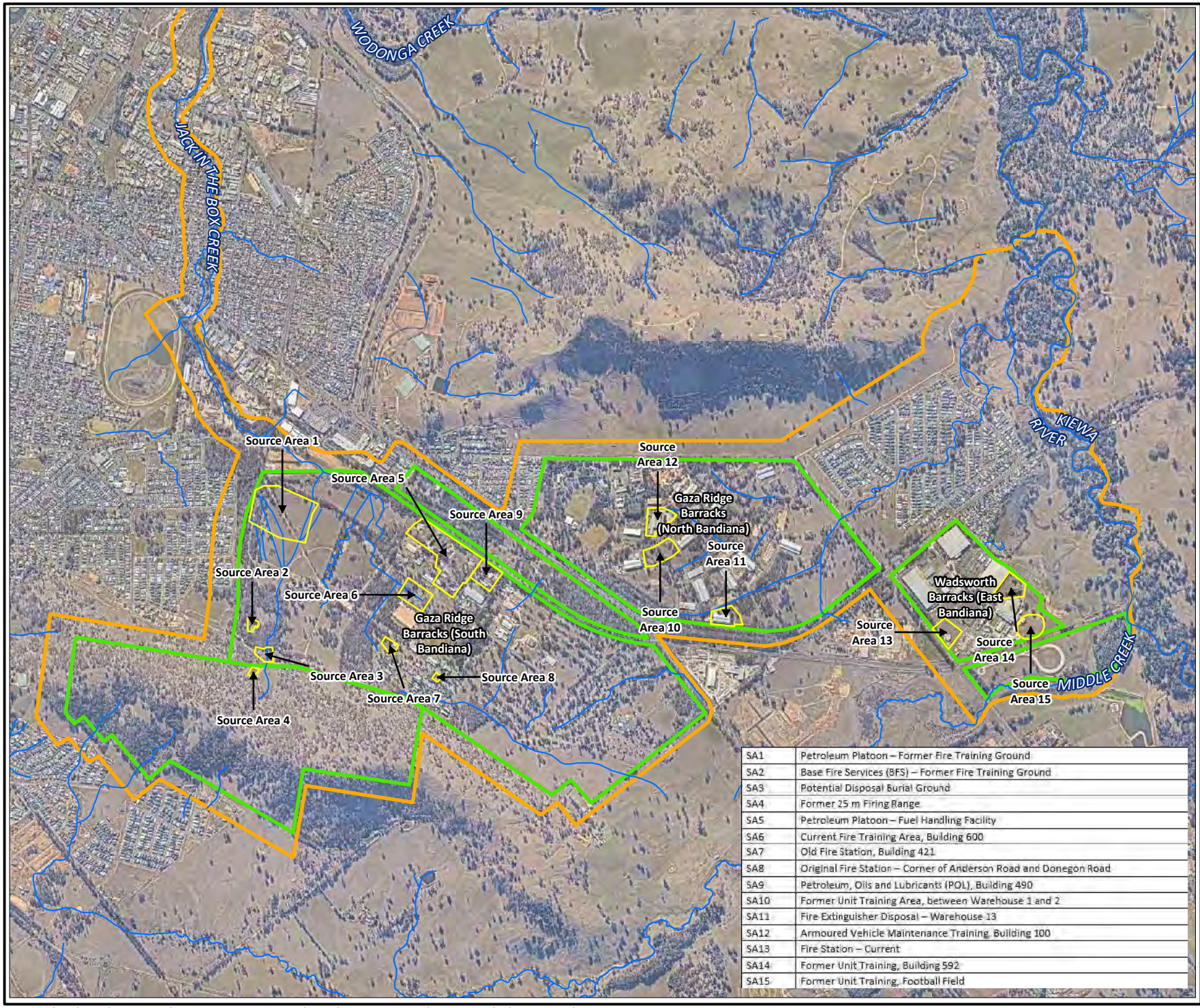
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SITE LOCATION PLAN

FIGURE 1

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_01_Site_Location_Plan
Reference: www.nearmap.com - Imagery Date: 10/12/2023



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Watercourse

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:30,000

0 500 1,000

metres

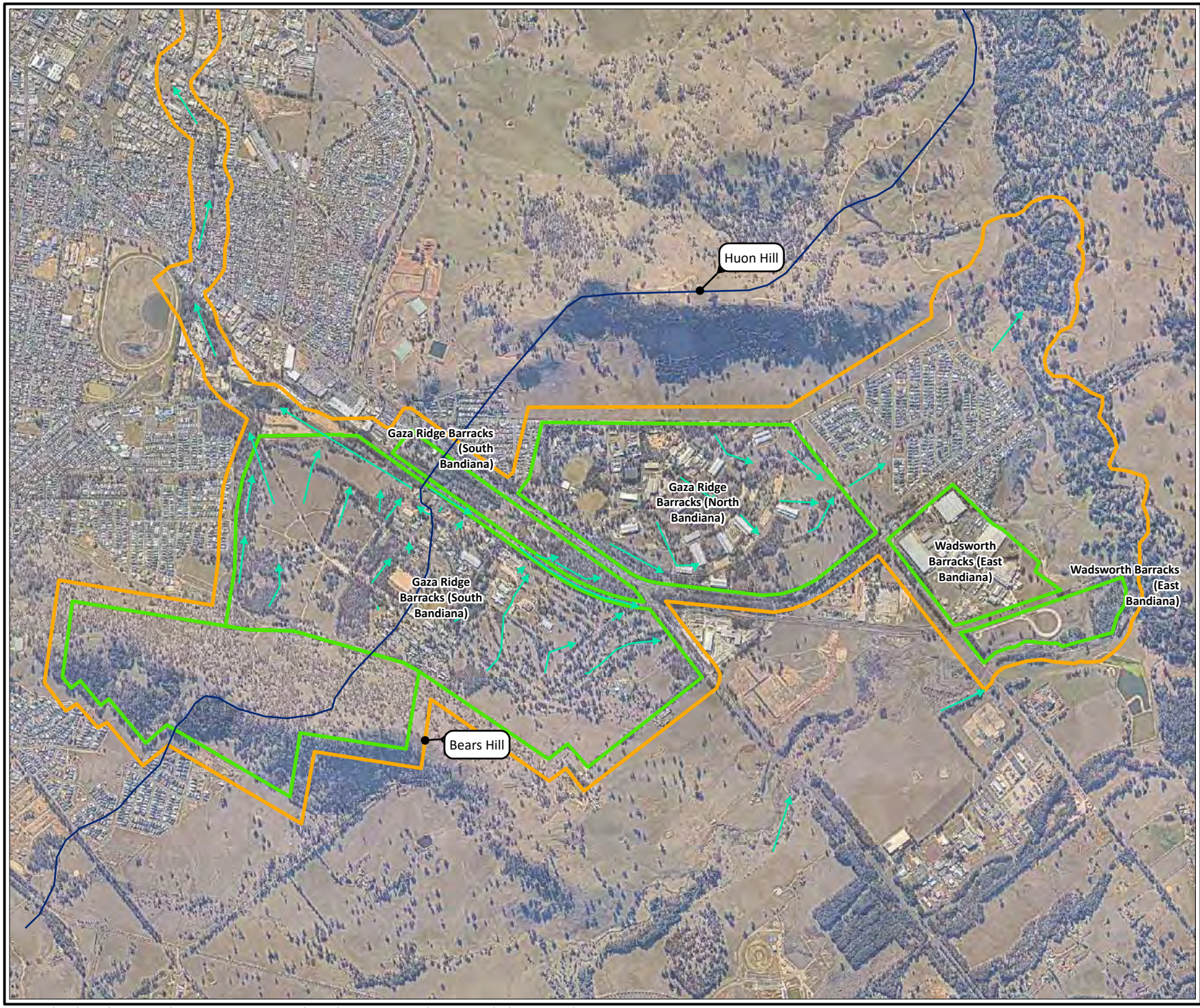
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SOURCE AREAS

FIGURE 2

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_02_Source_Areas
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



Legend

- Management Area
- Bandiana Military Area
- Stormwater Divide
- Drainage Flow Direction

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JS	Checked By: JS

Scale 1:30,000

0 500 1,000

metres

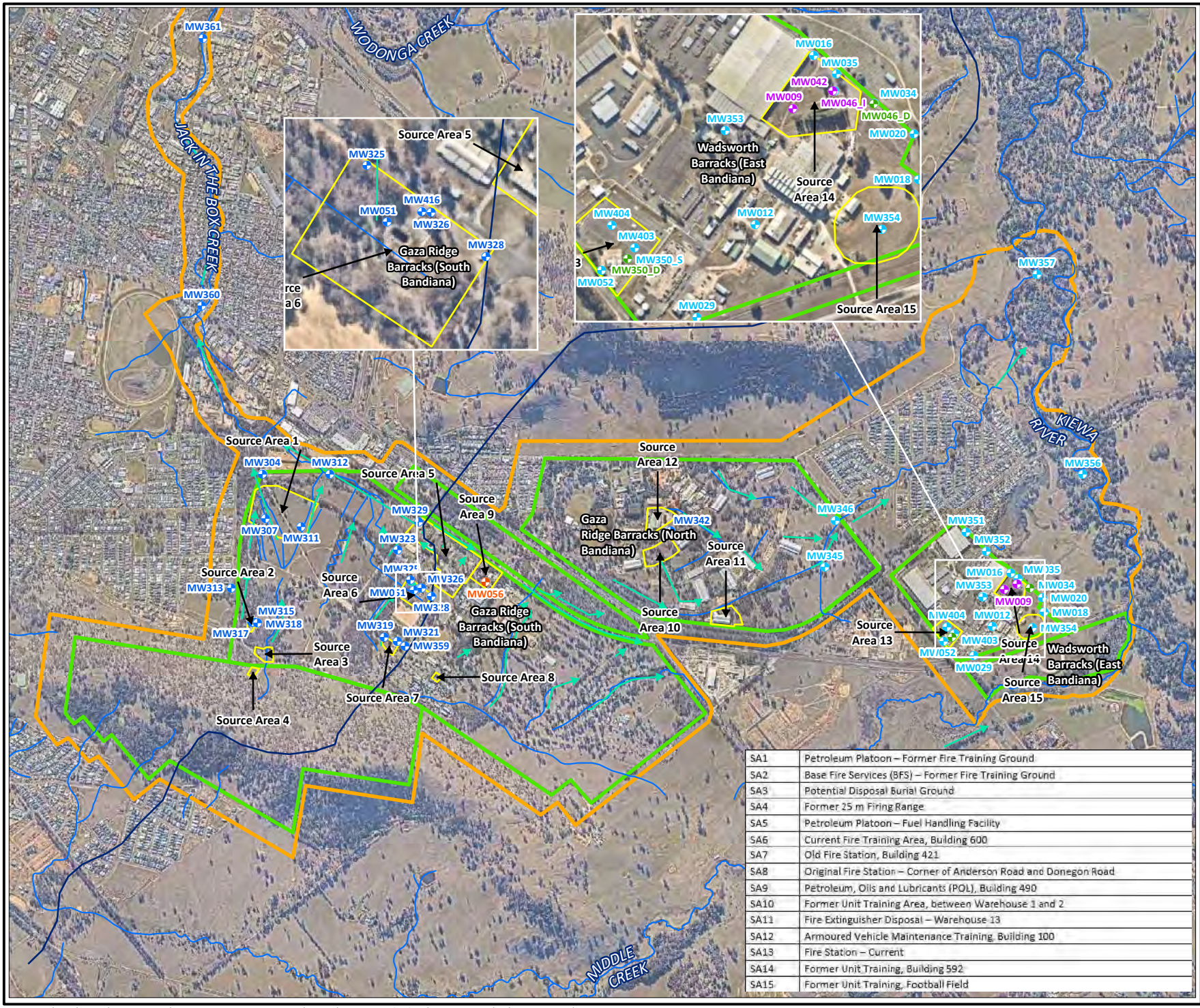
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SURFACE WATER DIVIDE AND PATHWAYS

FIGURE 3

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_03_AutosamplerandRising
Reference: ESRI Topographic Basemap - Accessed Imagery: 12/09/2024 & www.nearmap.com - Imagery Date: 10/12/2023



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction
- Shepparton Colluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium -Shallow Aquifer
- Shepparton and Coonambidgal Fluvium -Intermediate Aquifer
- Shepparton and Coonambidgal Fluvium -Deep Aquifer
- Perched Water

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:30,000

0 500 1,000

metres

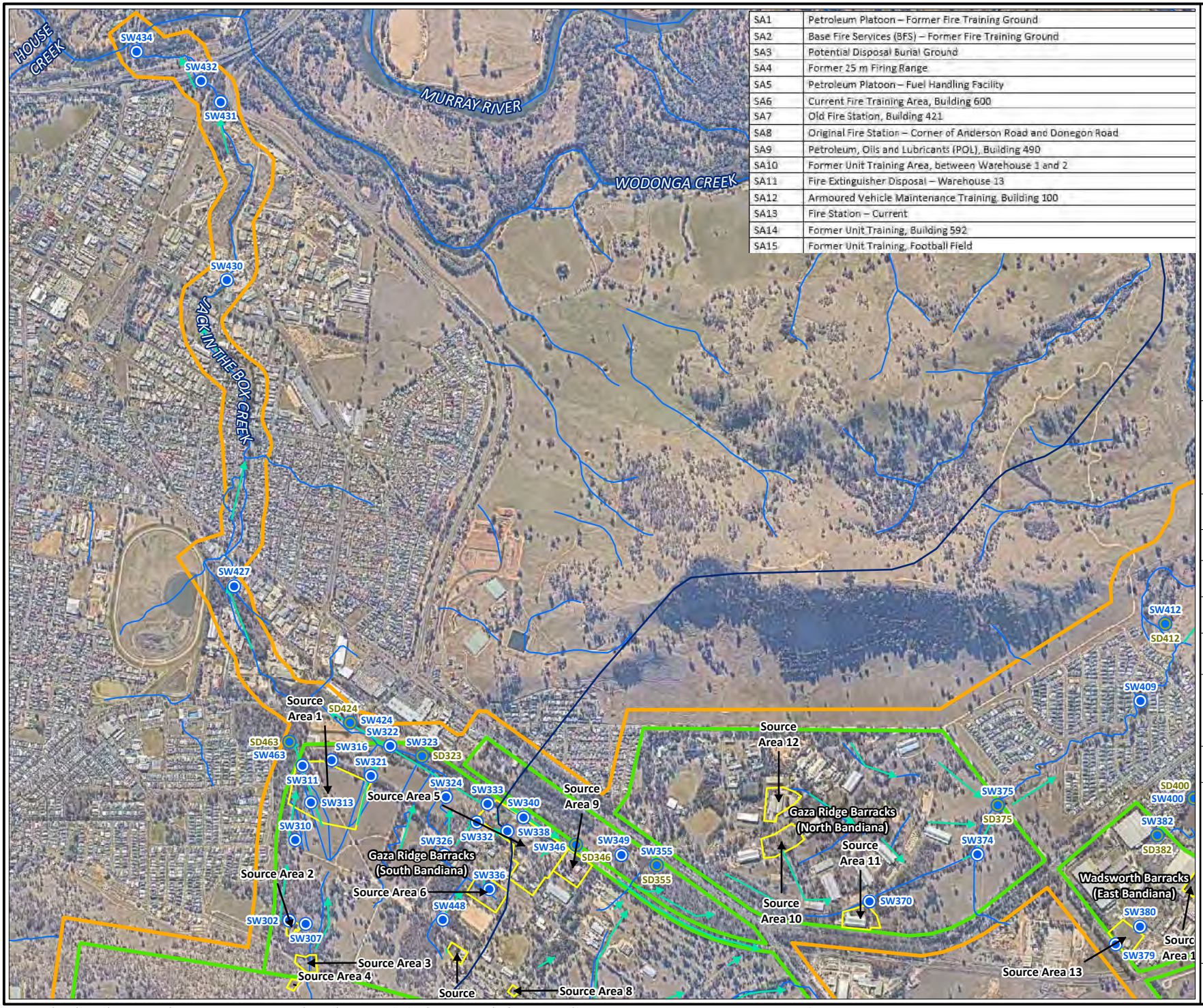
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

OMP GROUNDWATER SAMPLE LOCATIONS

FIGURE 4

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_04_OMP Groundwater Sample Locations
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction
- Surface Water Location
- Surface Water and Sediment Location

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:25,000

0 430 860

metres

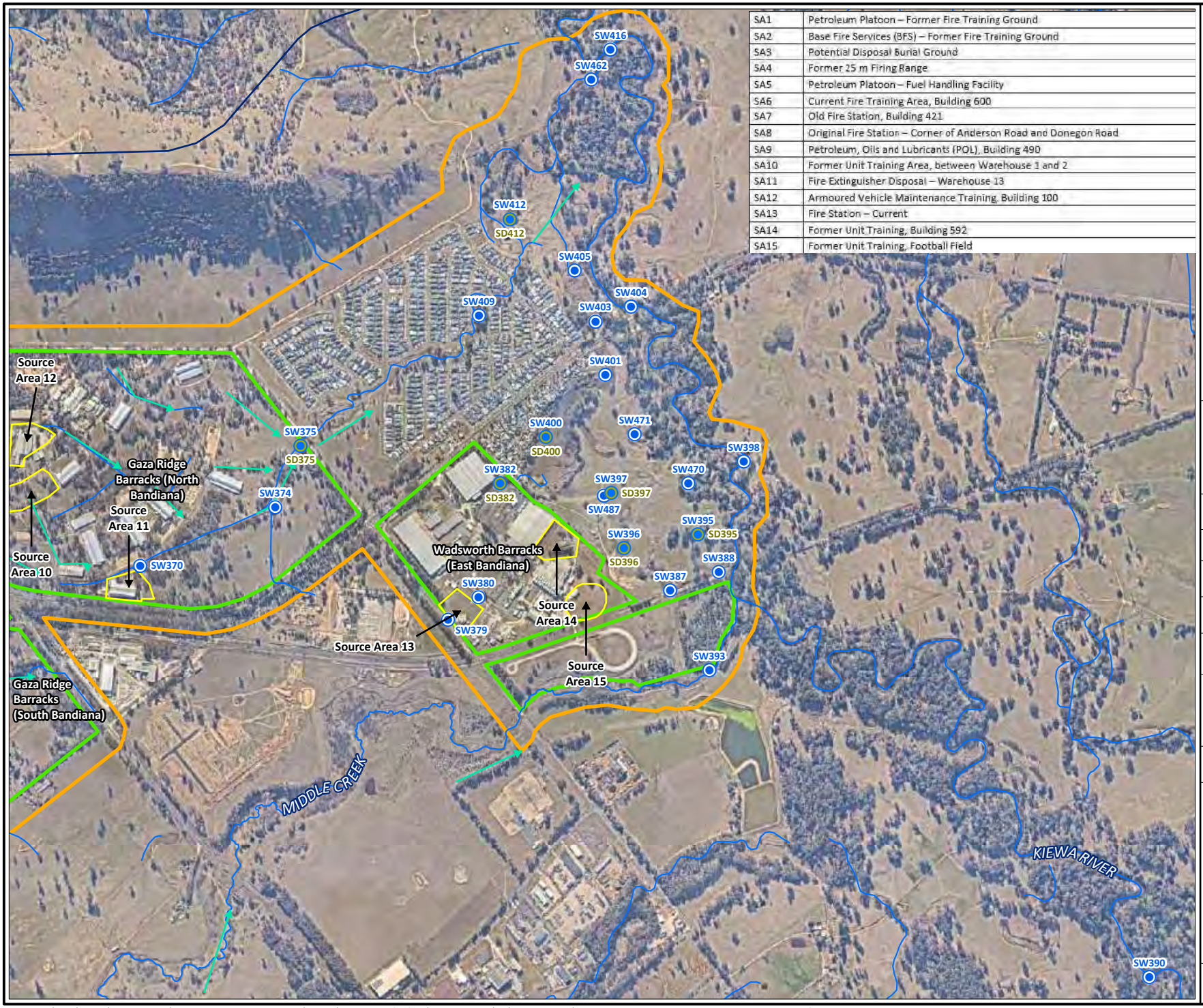
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

OMP SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

FIGURE 5A

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_05a_OMP Surface Water and Sediment Sample Locations West
Reference: ESRI Topographic Basemap - Accessed Imagery: 12/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction
- Surface Water Location
- Surface Water and Sediment Location

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:20,000

0 340 680

metres

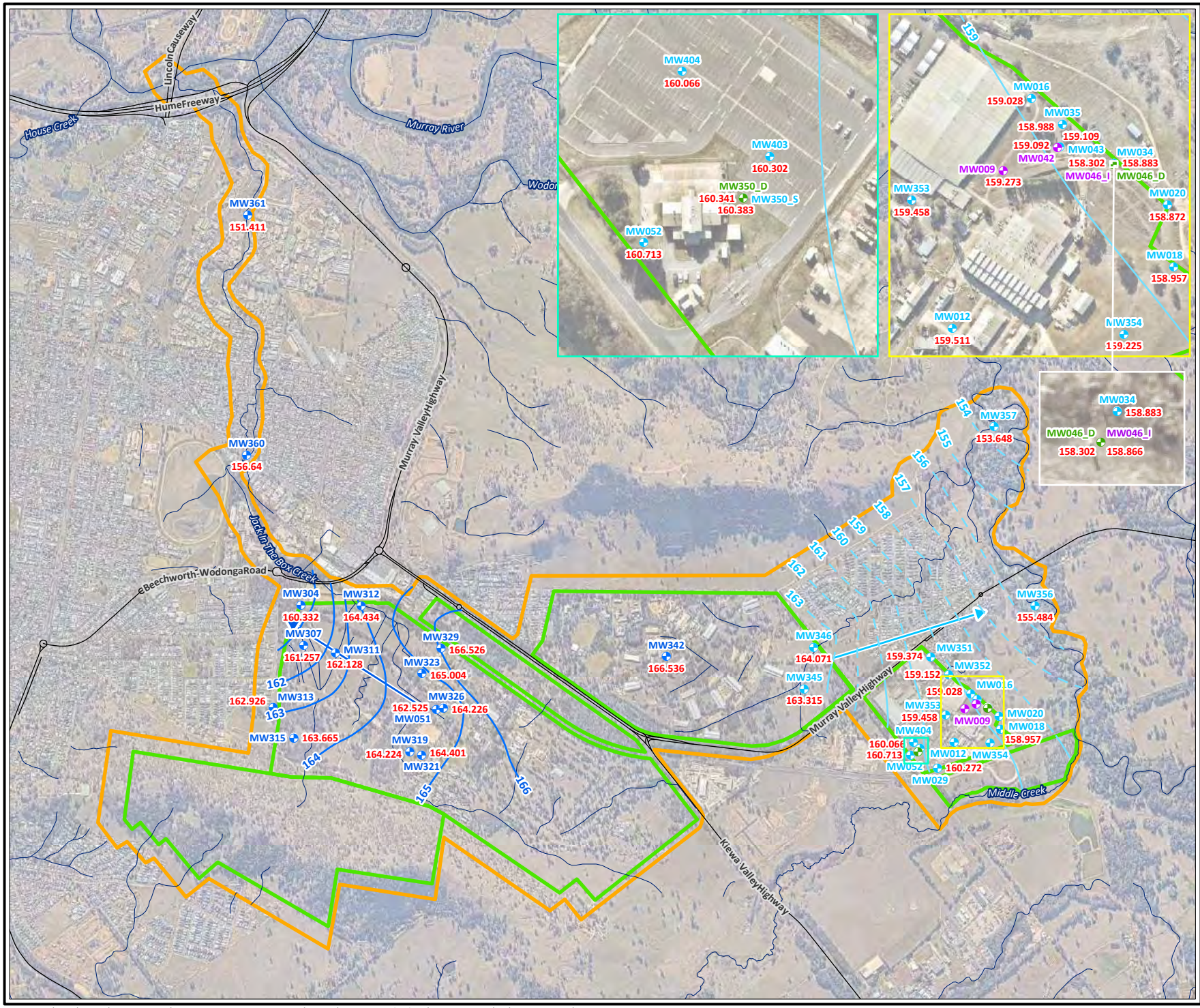
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

OMP SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

FIGURE 5B

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_05b_OMP Surface Water and Sediment Sample Locations East
Reference: ESRI Topographic Basemap - Accessed Imagery: 12/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



Legend

- Management Area
- Bandiana Military Area
- Roads
- Watercourse
- Inferred Shepparton Colluvium - Shallow Aquifer On Base Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Off Base Contour
- Inferred Shepparton Colluvium - Shallow Aquifer Flow Direction
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Flow Direction
- Shepparton Colluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Intermediate Aquifer
- Shepparton and Coonambidgal Fluvium - Deep Aquifer
- 160.44 Standing Water Level (mAHD)

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JS	Checked By: JS

Scale 1:33,500

0 500 1,000
metres

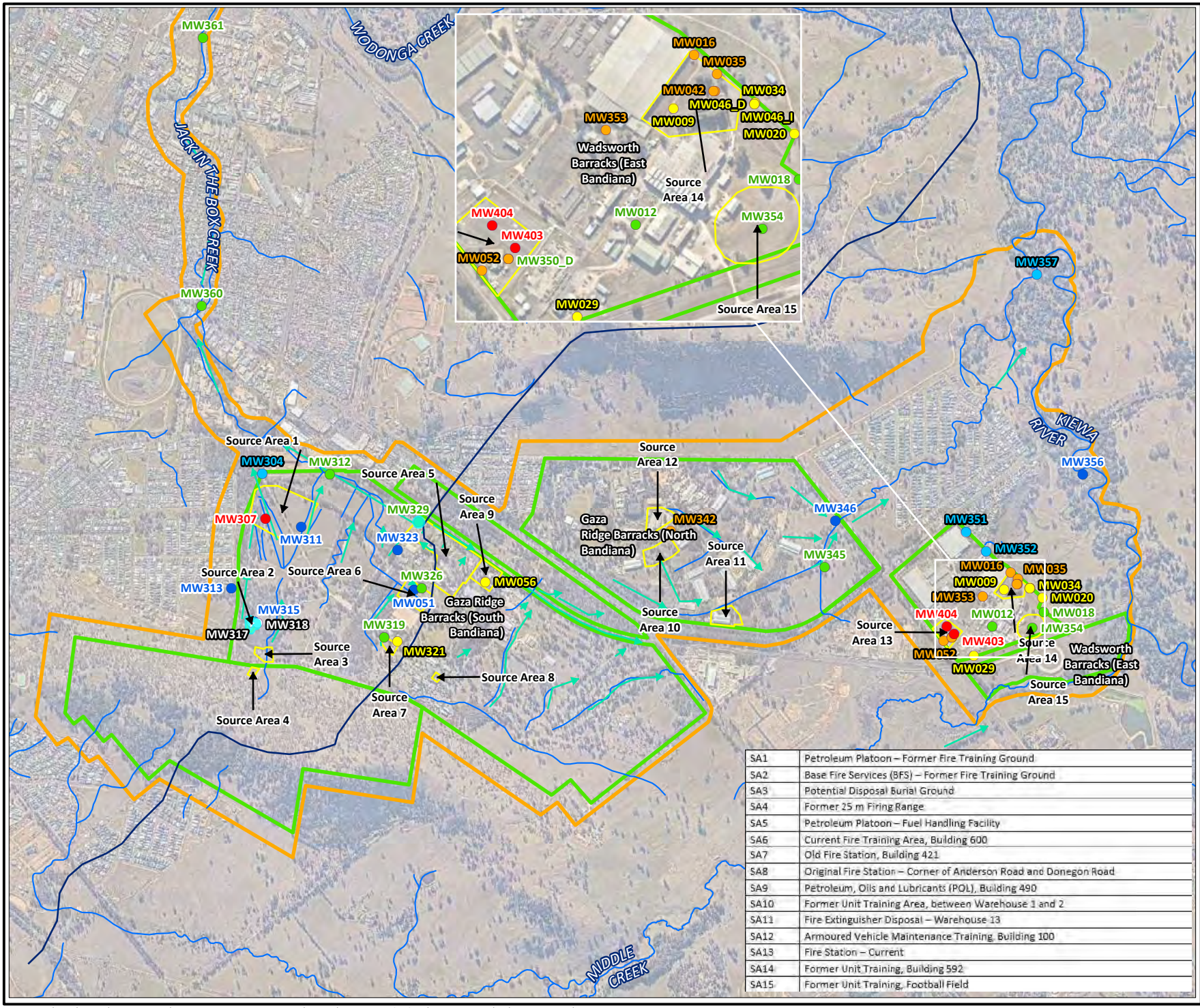
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER CONTOURS (NOVEMBER 2021)

FIGURE 6A

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_06a_Groundwater Contours November 2021
Reference: www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07 µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7 µg/L
- 7 to 70 µg/L
- >70 µg/L
- Not Sampled

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:30,000

0 500 1,000

metres

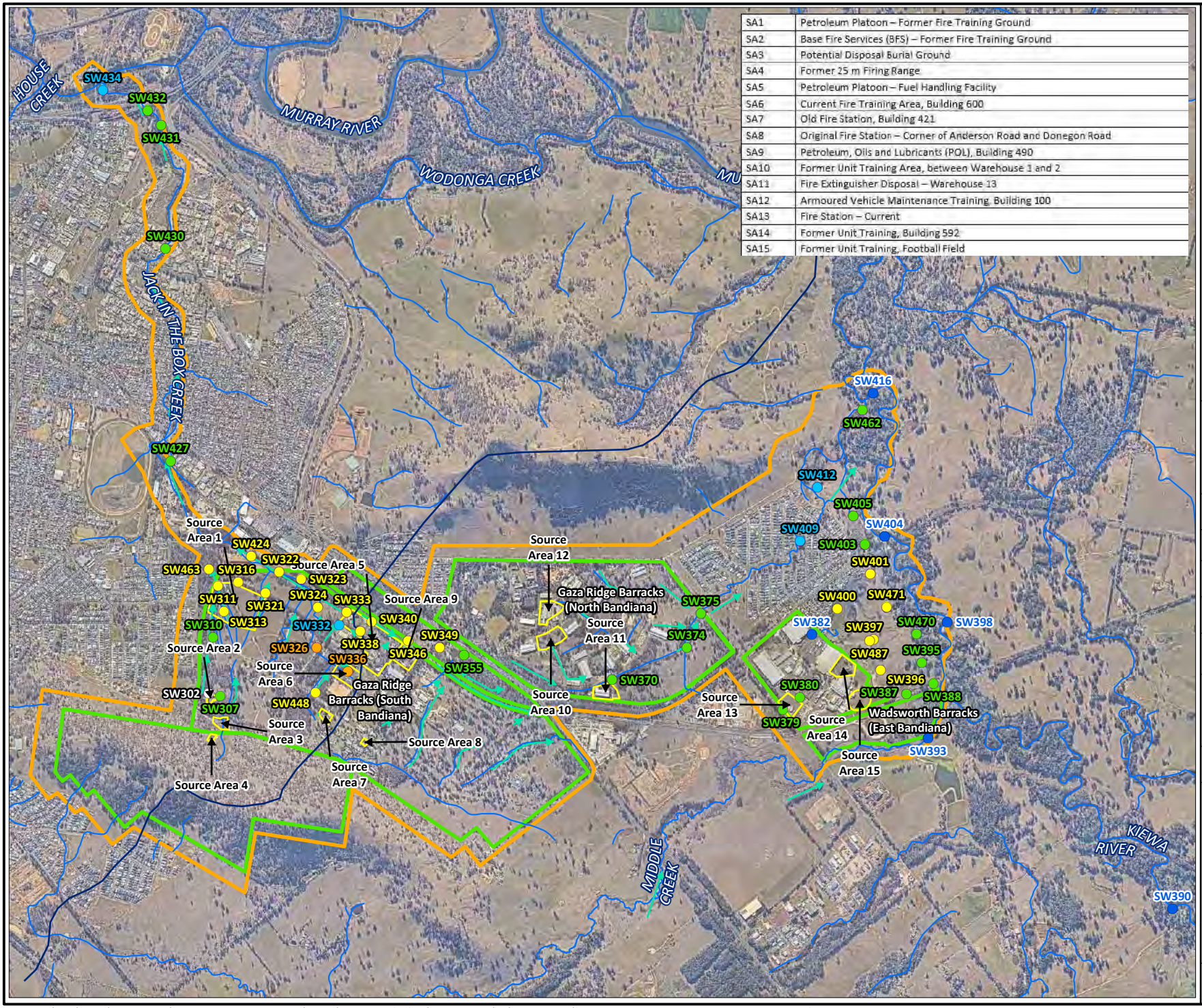
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER SUM OF PFHxS +PFOS CONCENTRATIONS (NOVEMBER 2021)

FIGURE 6B

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_06b_OMP Groundwater PFOS+PFHxS Concentrations Nov 2021
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- 7 to 70µg/L
- Not Sampled

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:36,000

0 600 1,200

metres

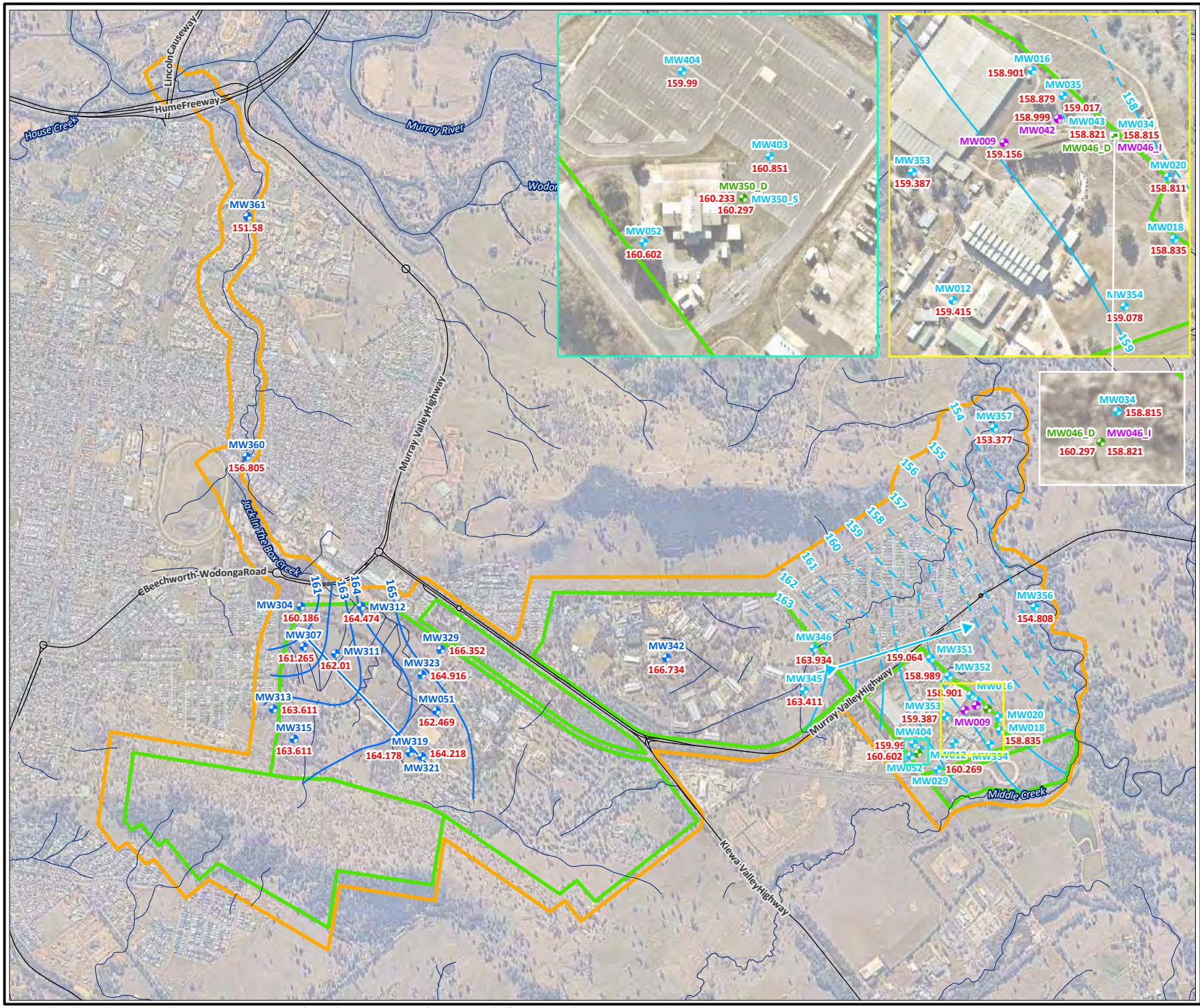
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SURFACE WATER SUM OF PFHxS +PFOS CONCENTRATIONS (NOVEMBER 2021)

FIGURE 6C

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_06c_OMP Surface Water PFOS+PFHxS Concentrations Nov 2021
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



Legend

- Management Area
- Bandiana Military Area
- Watercourse
- Roads
- Inferred Shepparton Colluvium - Shallow Aquifer Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Off Base Contour
- Inferred Shepparton Colluvium - Shallow Aquifer Flow Direction
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Flow Direction
- Shepparton Colluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Intermediate Aquifer
- Shepparton and Coonambidgal Fluvium - Deep Aquifer
- 160.44 Standing Water Level (mAHD)

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JS	Checked By: JS

Scale 1:33,500

0 500 1,000
metres

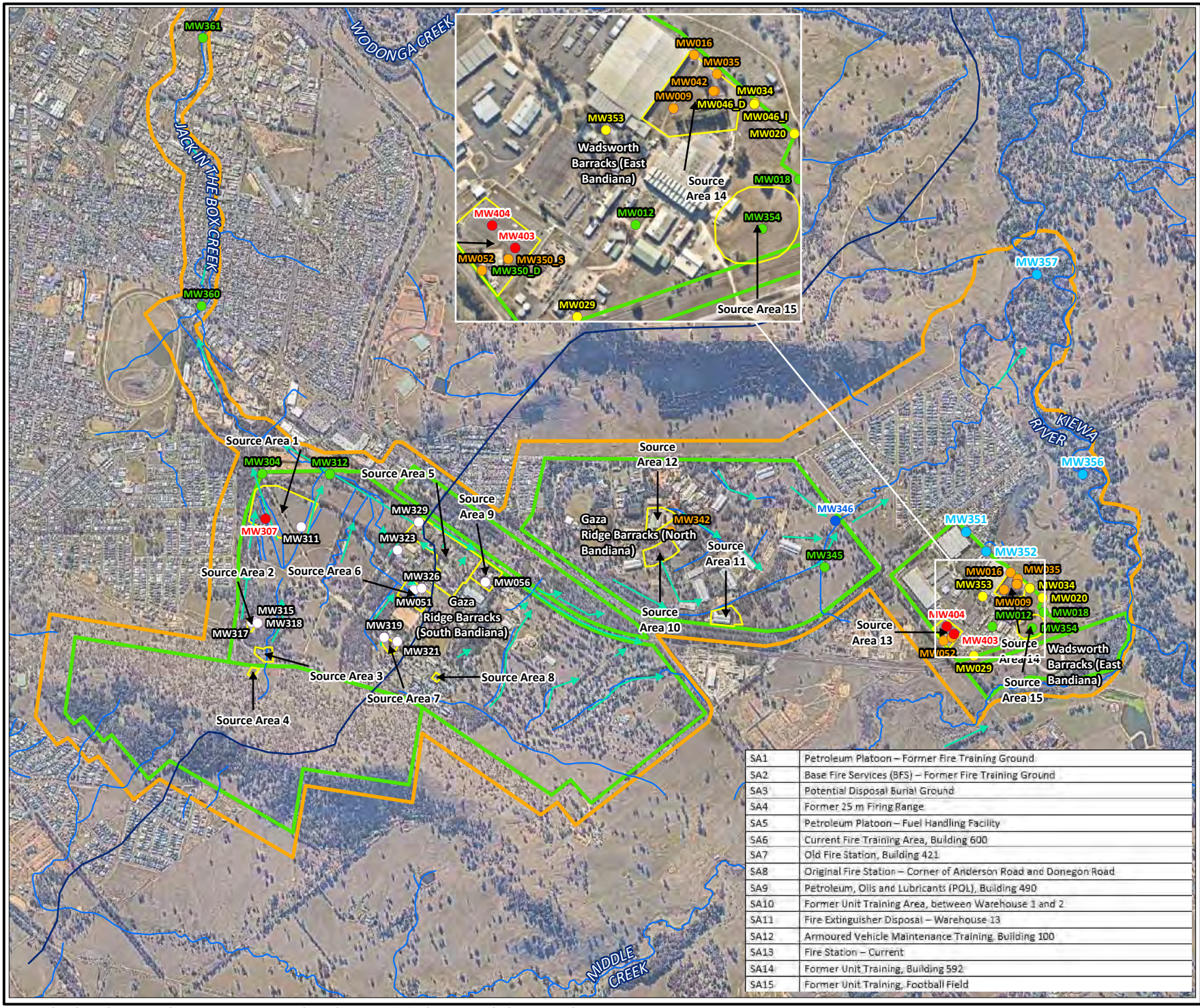
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER CONTOURS (MAY 2022)

FIGURE 7A

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_07a_Groundwater Contours May 2022
Reference: www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- 7 to 70µg/L
- >70 µg/L
- Not Sampled

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:30,000

0 500 1,000

metres

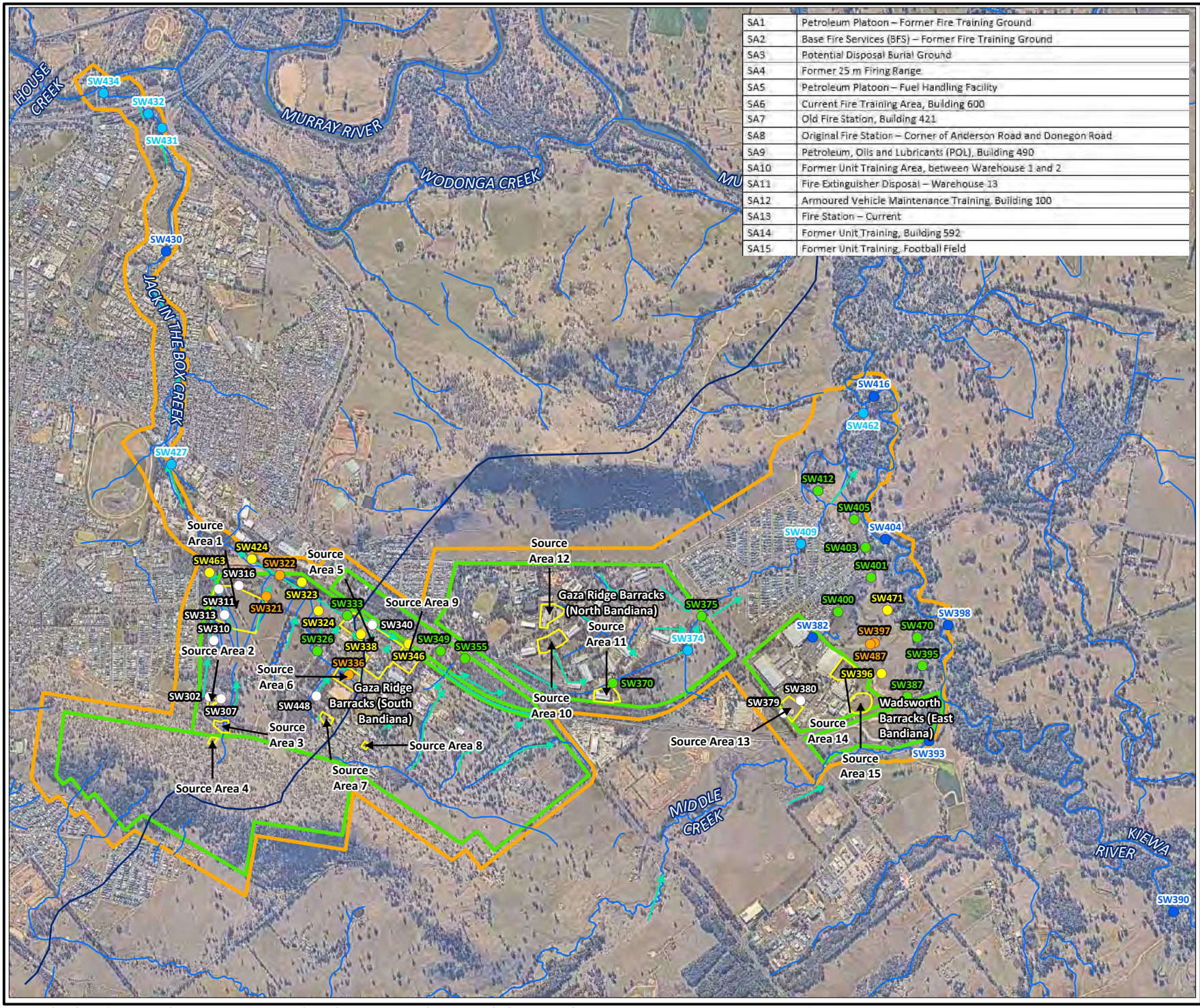
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER SUM OF PFHxS +PFOS CONCENTRATIONS (MAY 2022)

FIGURE 7B

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_07b_OMP Groundwater PFOS+PFHxS Concentrations May 2022
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- 7 to 70µg/L
- Not Sampled

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:36,000

0 600 1,200

metres

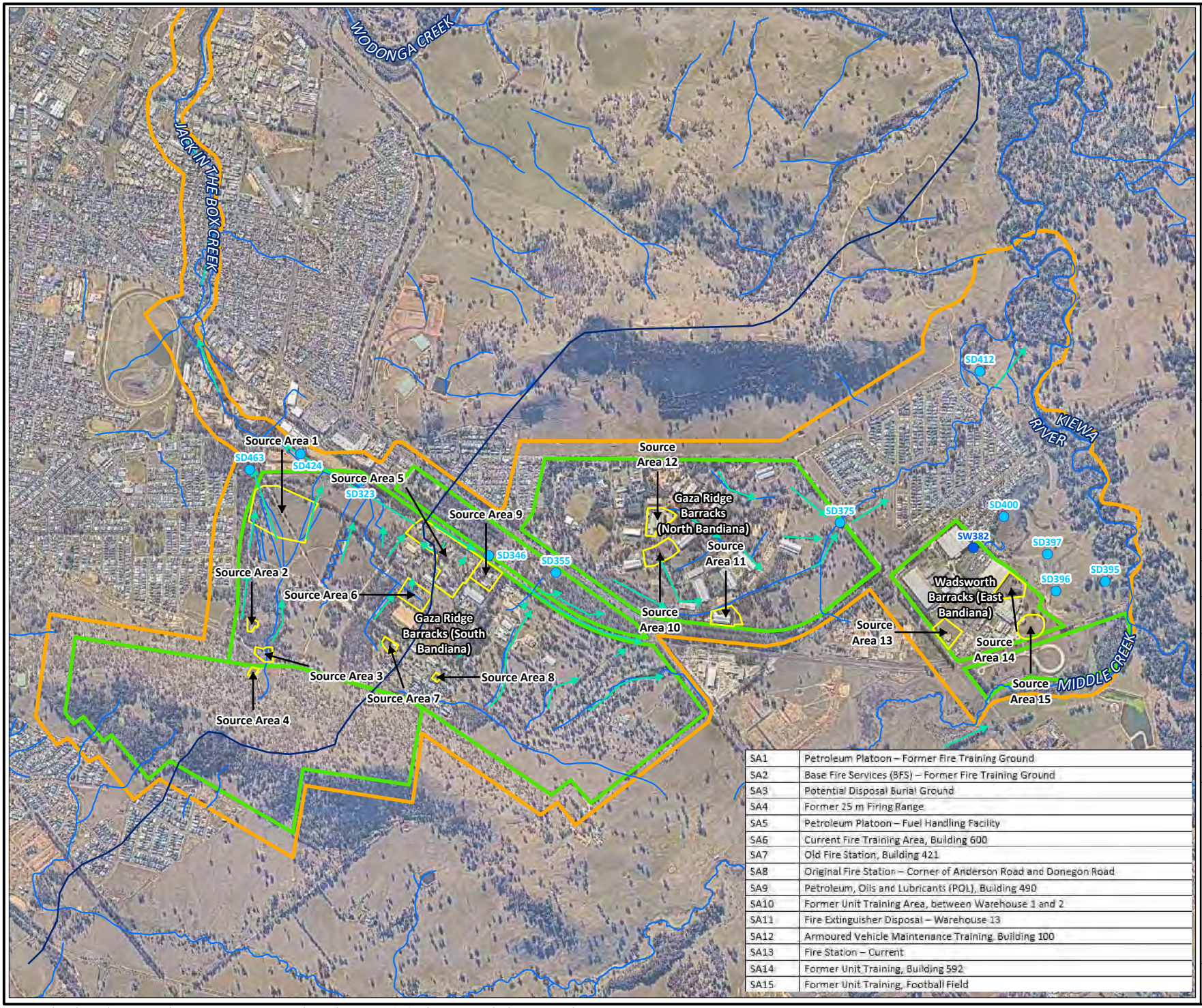
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SURFACE WATER SUM OF PFHxS +PFOS CONCENTRATIONS (MAY 2022)

FIGURE 7C

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_07c_OMP Surface Water PFOS+PFHxS Concentrations May 2022
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:30,000

0 500 1,000

metres

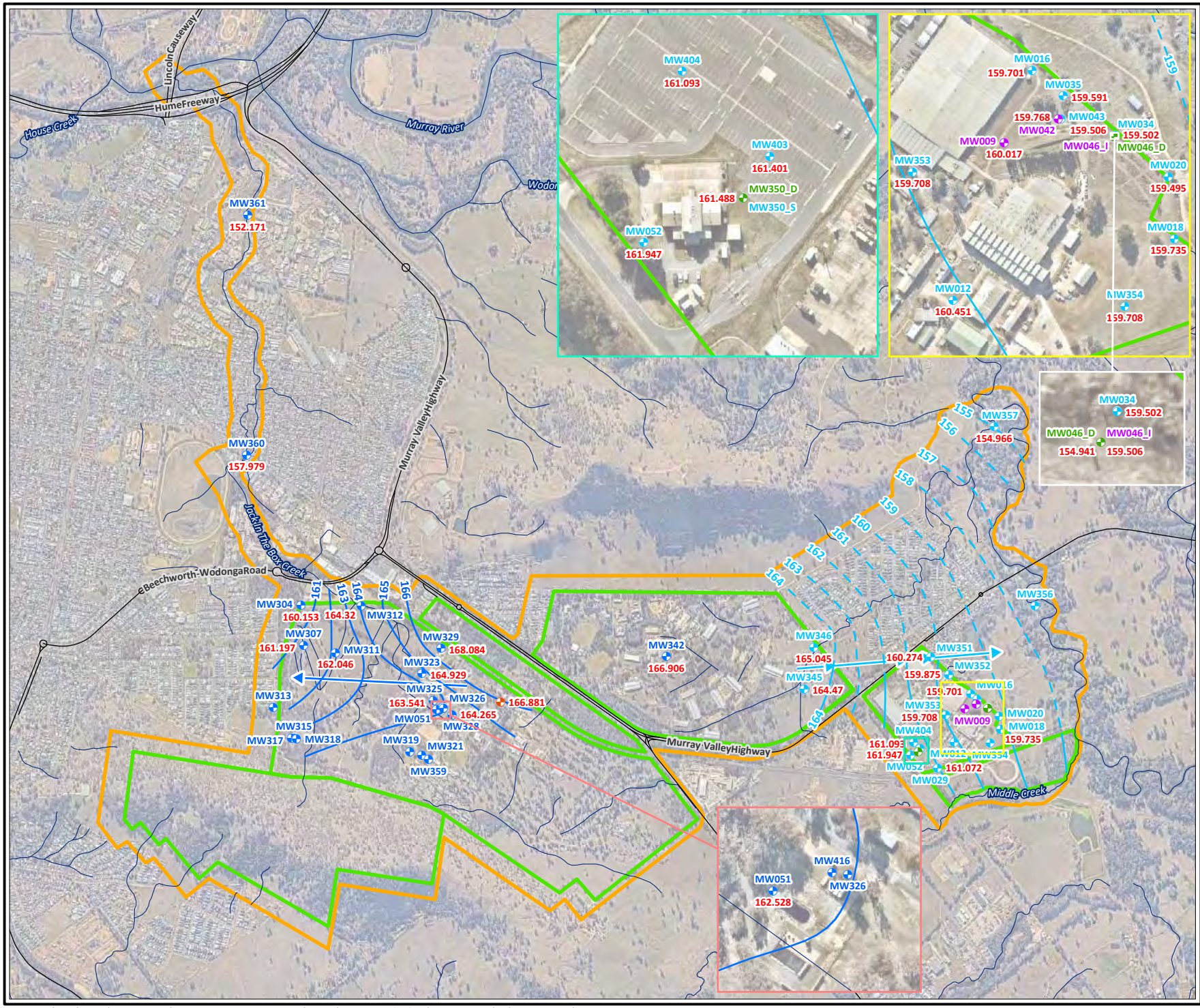
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SEDIMENT SUM OF PFHxS +PFOS CONCENTRATIONS (MAY 2022)

FIGURE 7D

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_07d_OMP Sediment PFOS+PFHxS Concentrations May 2022
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



Legend

- Management Area
- Bandiana Military Area
- Watercourse
- Roads
- Inferred Shepparton Colluvium - Shallow Aquifer On Base Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Off Base Contour
- Inferred Shepparton Colluvium - Shallow Aquifer Flow Direction
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Flow Direction
- Shepparton Colluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Intermediate Aquifer
- Shepparton and Coonambidgal Fluvium - Deep Aquifer
- Perched Water
- 160.44 Standing Water Level (mAHD)

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JS	Checked By: JS

Scale 1:33,500

0 500 1,000

metres

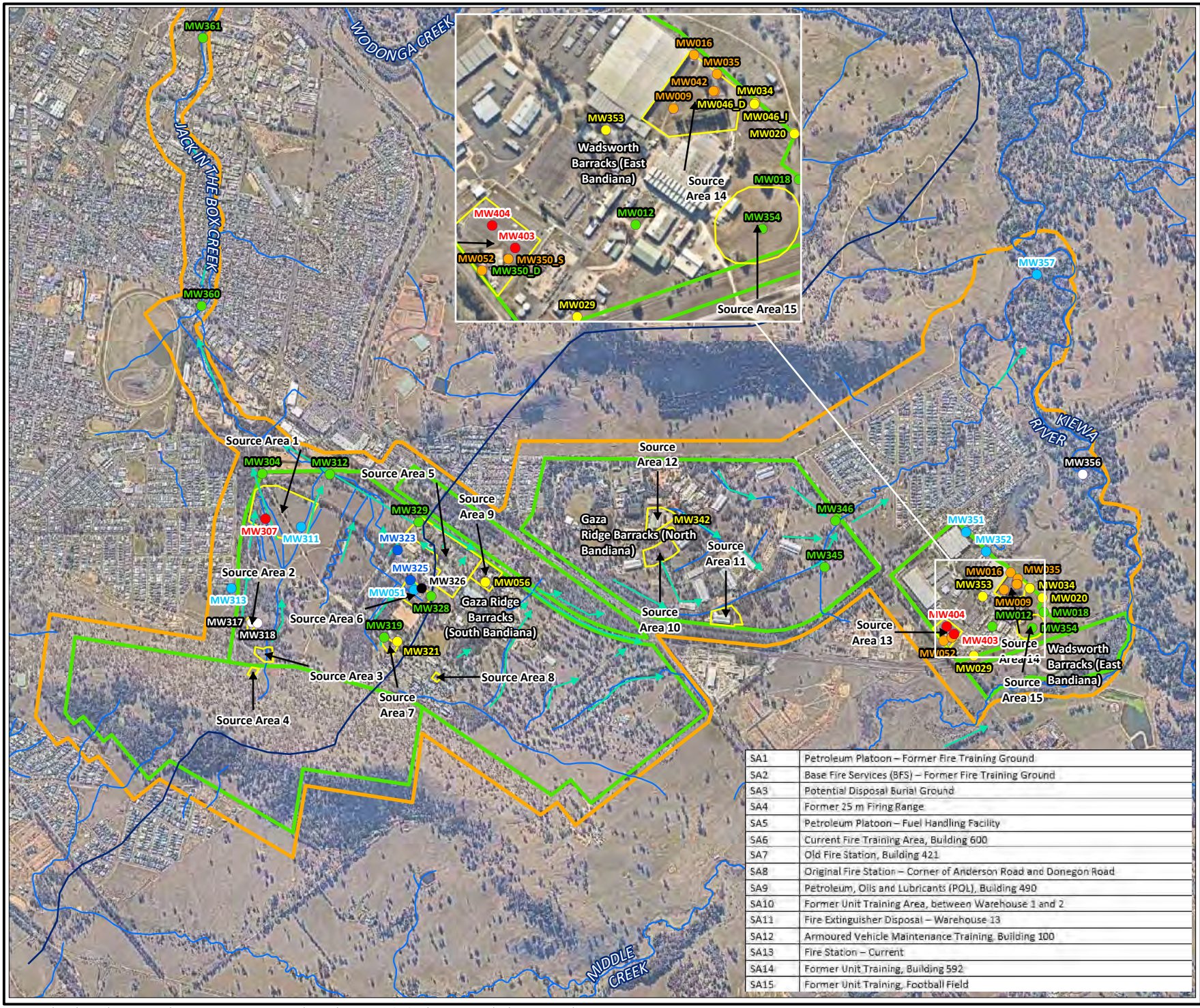
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER CONTOURS (OCTOBER 2022)

FIGURE 8A

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_08a_Groundwater Contours October 2022
Reference: www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- 7 to 70µg/L
- >70 µg/L
- Not Sampled
- Not Sampled - Damaged

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:30,000

0 500 1,000

metres

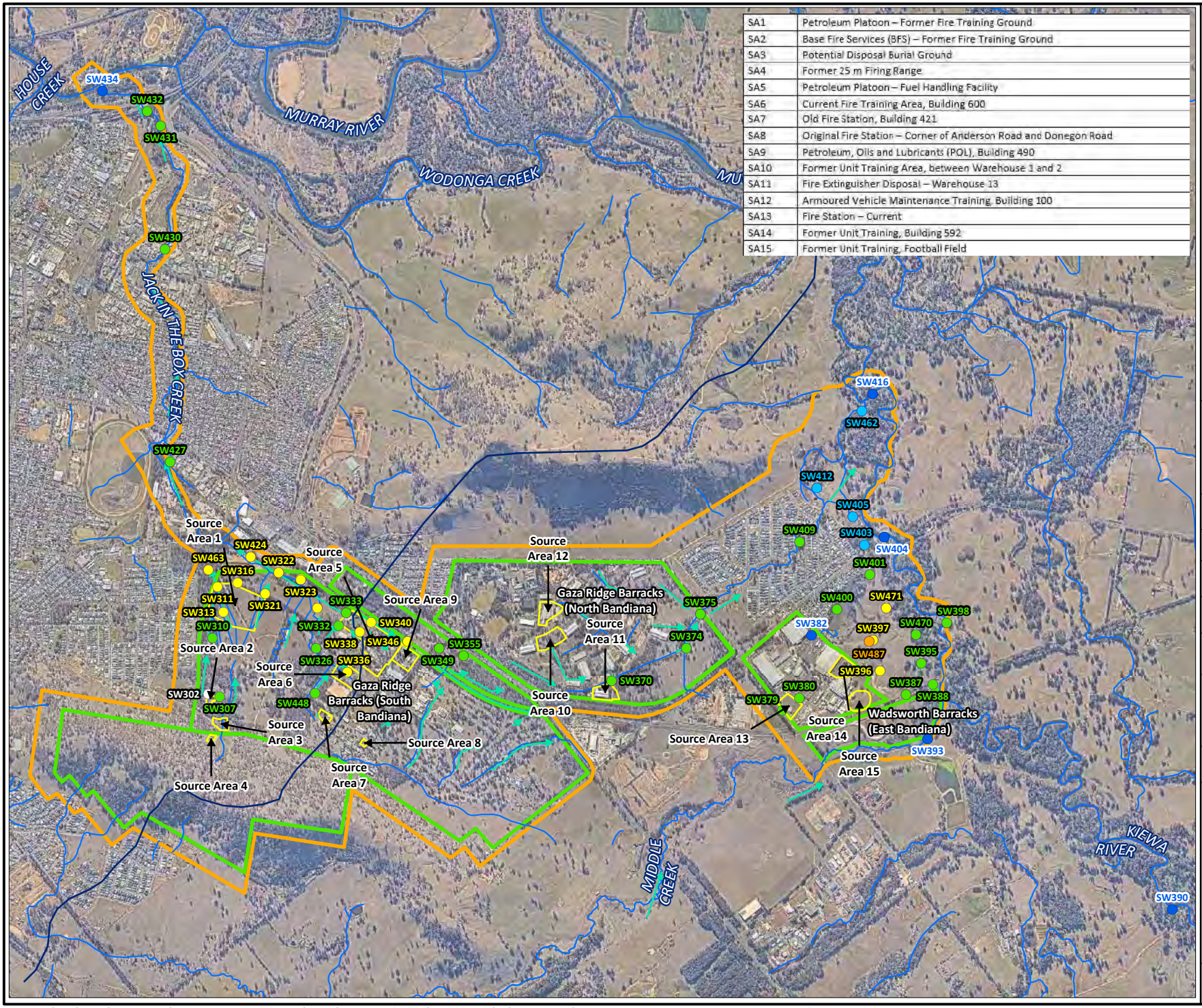
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER SUM OF PFHxS +PFOS CONCENTRATIONS (OCTOBER 2022)

FIGURE 8B

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_08b_OMP Groundwater PFOS+PFHxS Concentrations Oct 2022
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- 7 to 70µg/L
- Not Sampled

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:36,000

0 600 1,200

metres

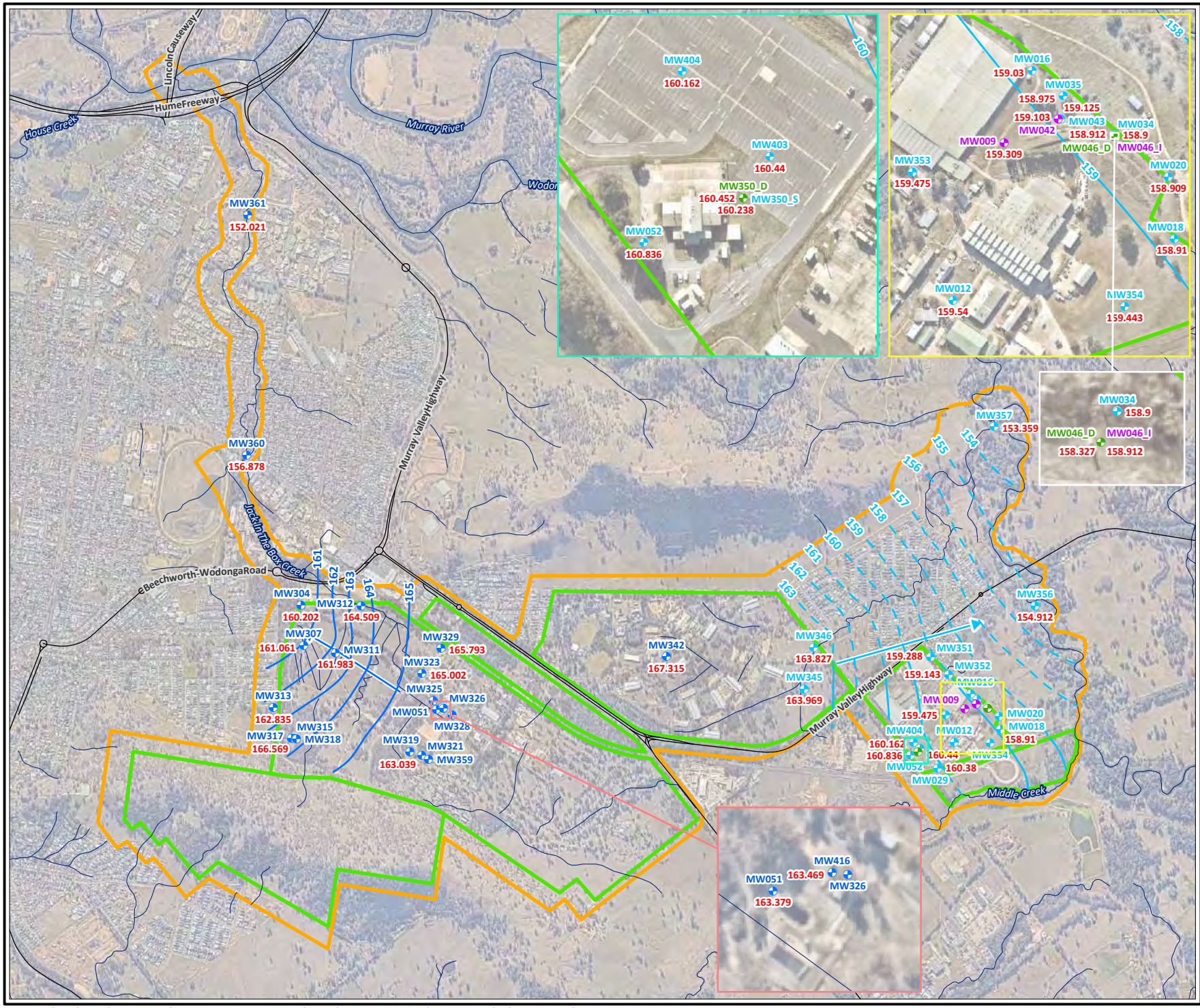
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SURFACE WATER SUM OF PFHxS +PFOS CONCENTRATIONS (OCTOBER 2022)

FIGURE 8C

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_08c_OMP Surface Water PFOS+PFHxS Concentrations Oc 2022
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



Legend

- Management Area
- Bandiana Military Area
- Roads
- Watercourse
- Inferred Shepparton Colluvium - Shallow Aquifer Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer On Base Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Off Base Contour
- Inferred Shepparton Colluvium - Shallow Aquifer Flow Direction
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Flow Direction
- Shepparton Colluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Intermediate Aquifer
- Shepparton and Coonambidgal Fluvium - Deep Aquifer
- 160.44 Standing Water Level (mAHD)

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JS	Checked By: JS

Scale 1:33,500

0 500 1,000
metres

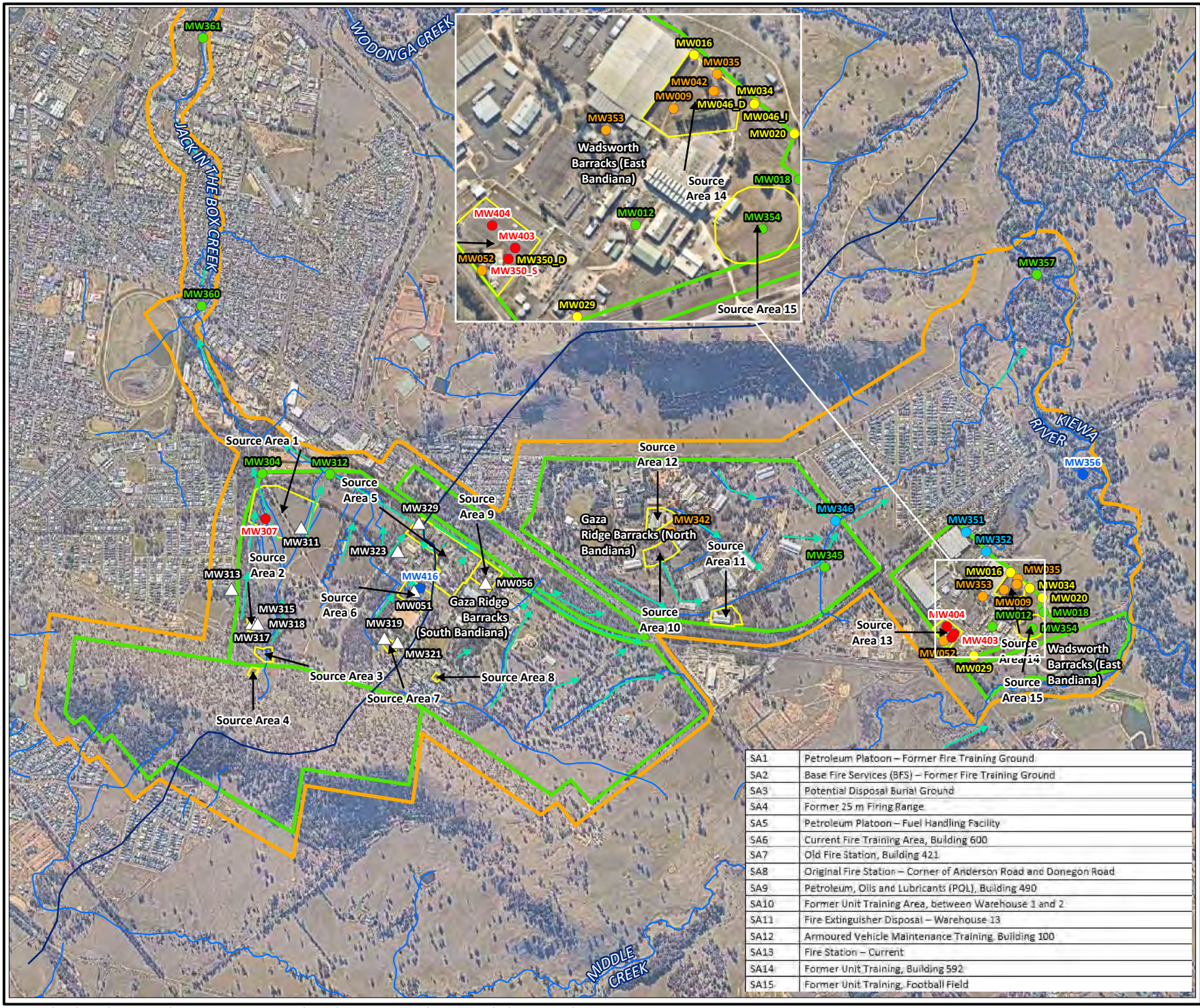
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER CONTOURS (MAY 2023)

FIGURE 9A

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_09a_OMP_Groundwater Contours May 2023
Reference: www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- 7 to 70µg/L
- >70 µg/L
- Gauge Only

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:30,000

0 500 1,000

metres

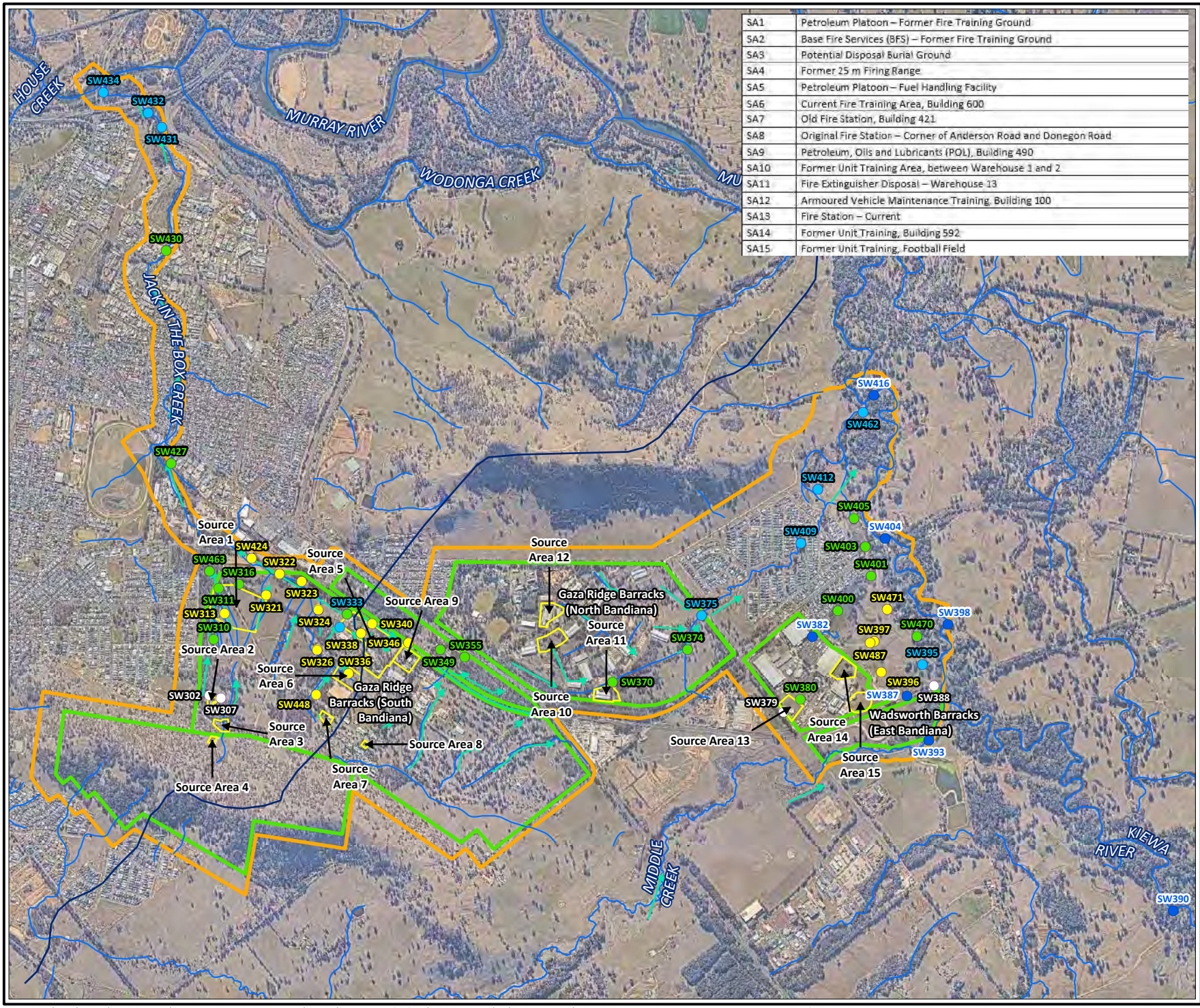
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER SUM OF PFHxS +PFOS CONCENTRATIONS (MAY 2023)

FIGURE 9B

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_09b_OMP Groundwater PFOS+PFHxS Concentrations May 2023
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- Not Sampled

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:36,000

0 600 1,200

metres

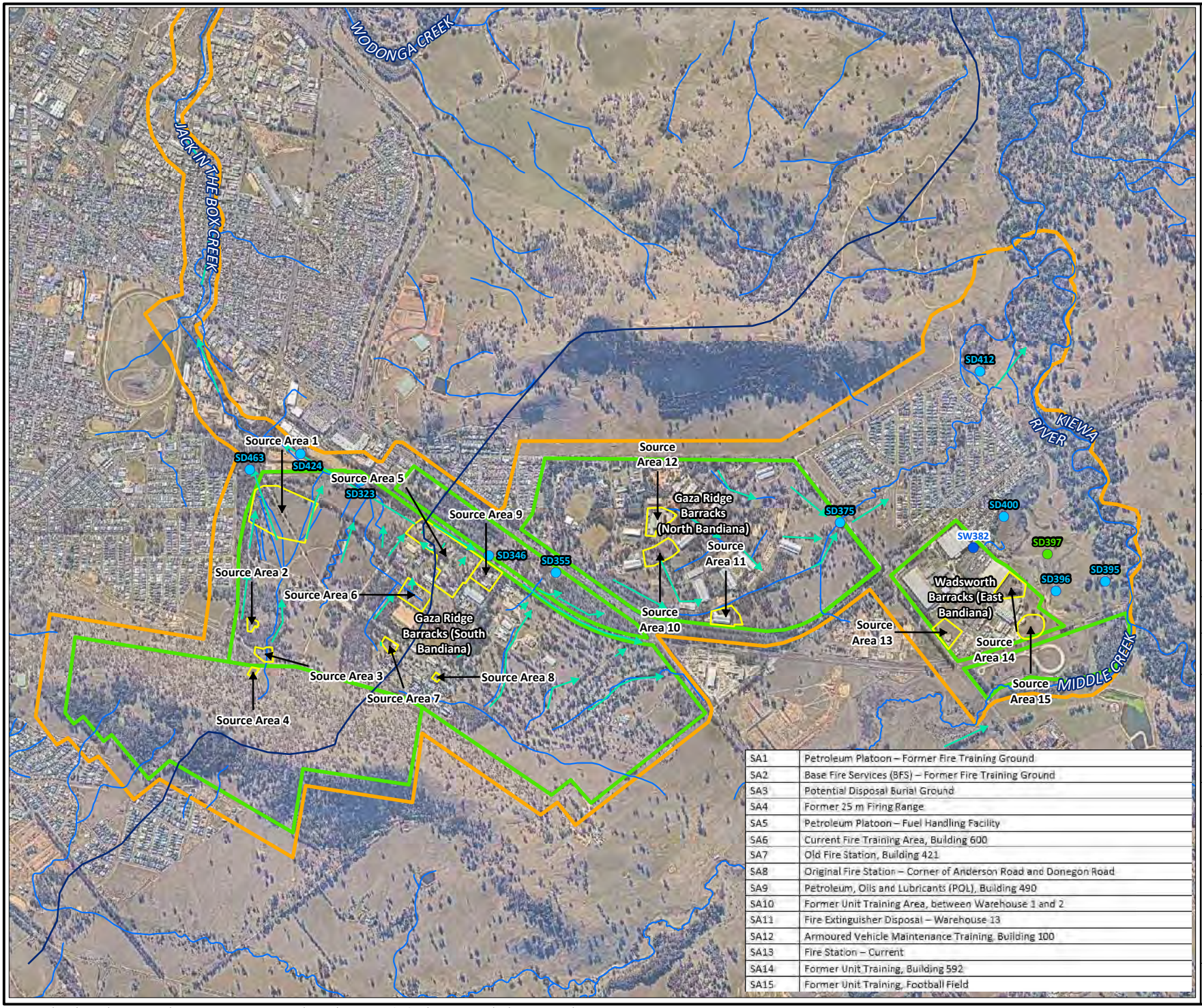
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SURFACE WATER SUM OF PFHxS +PFOS CONCENTRATIONS (MAY 2023)

FIGURE 9C

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_09c_OMP Surface Water PFOS+PFHxS Concentrations May 2023
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JStrauss	Checked By: JS

Scale 1:30,000

0 500 1,000

metres

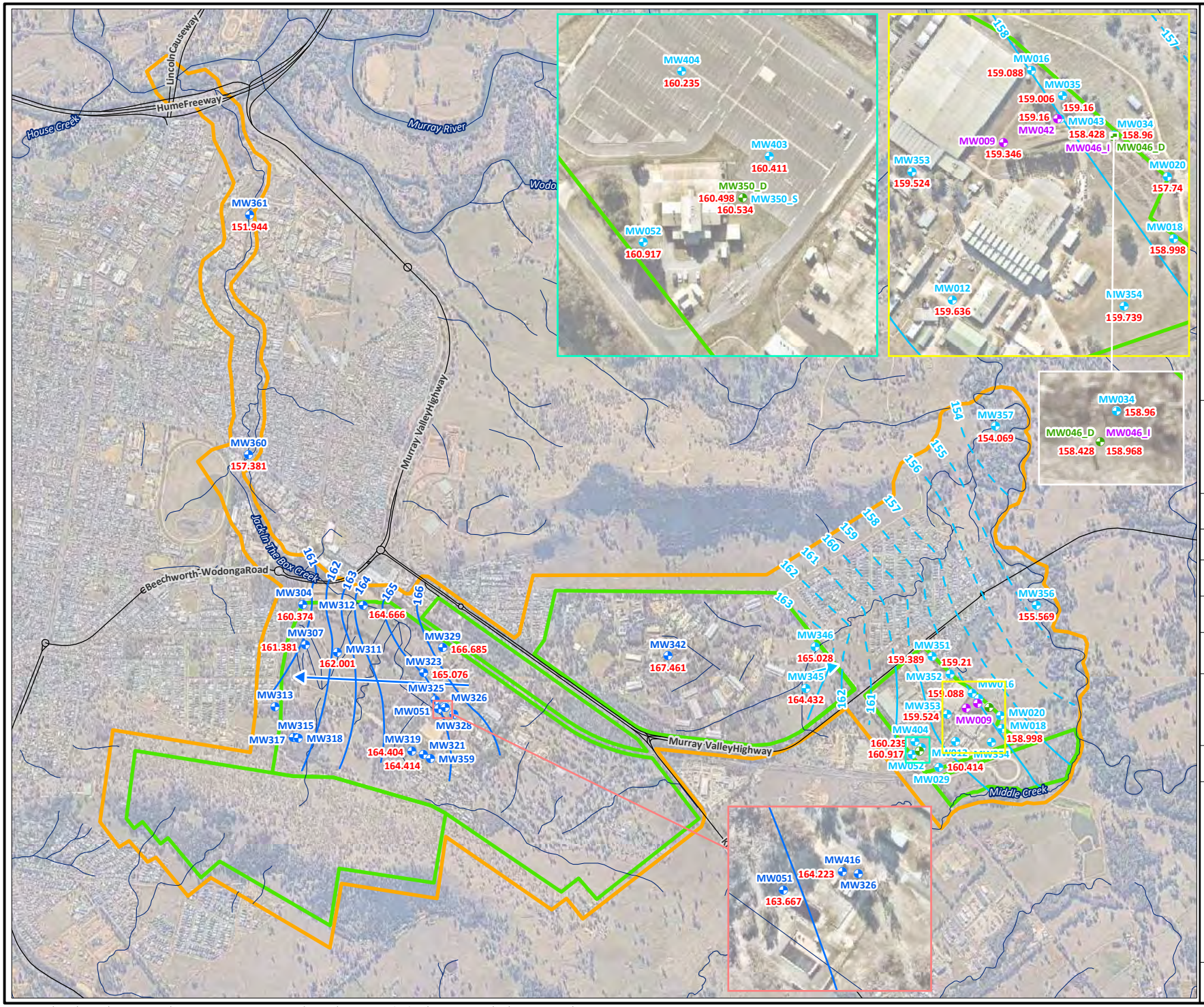
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SEDIMENT SUM OF PFHxS +PFOS CONCENTRATIONS (MAY 2023)

FIGURE 9D

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_09d_OMP Sediment PFOS+PFHxS Concentrations May 2023
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



Legend

- Management Area
- Bandiana Military Area
- Roads
- Watercourse
- Inferred Shepparton Colluvium - Shallow Aquifer On Base Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Contour
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Off Base Contour
- Inferred Shepparton Colluvium - Shallow Aquifer Flow Direction
- Inferred Shepparton and Coonambidgal Fluvium - Shallow Aquifer Flow Direction
- Shepparton Colluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium - Intermediate Aquifer
- Shepparton and Coonambidgal Fluvium - Deep Aquifer
- 160.44 Standing Water Level (mAHD)

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JS	Checked By: JS

Scale 1:33,500

0 500 1,000
metres

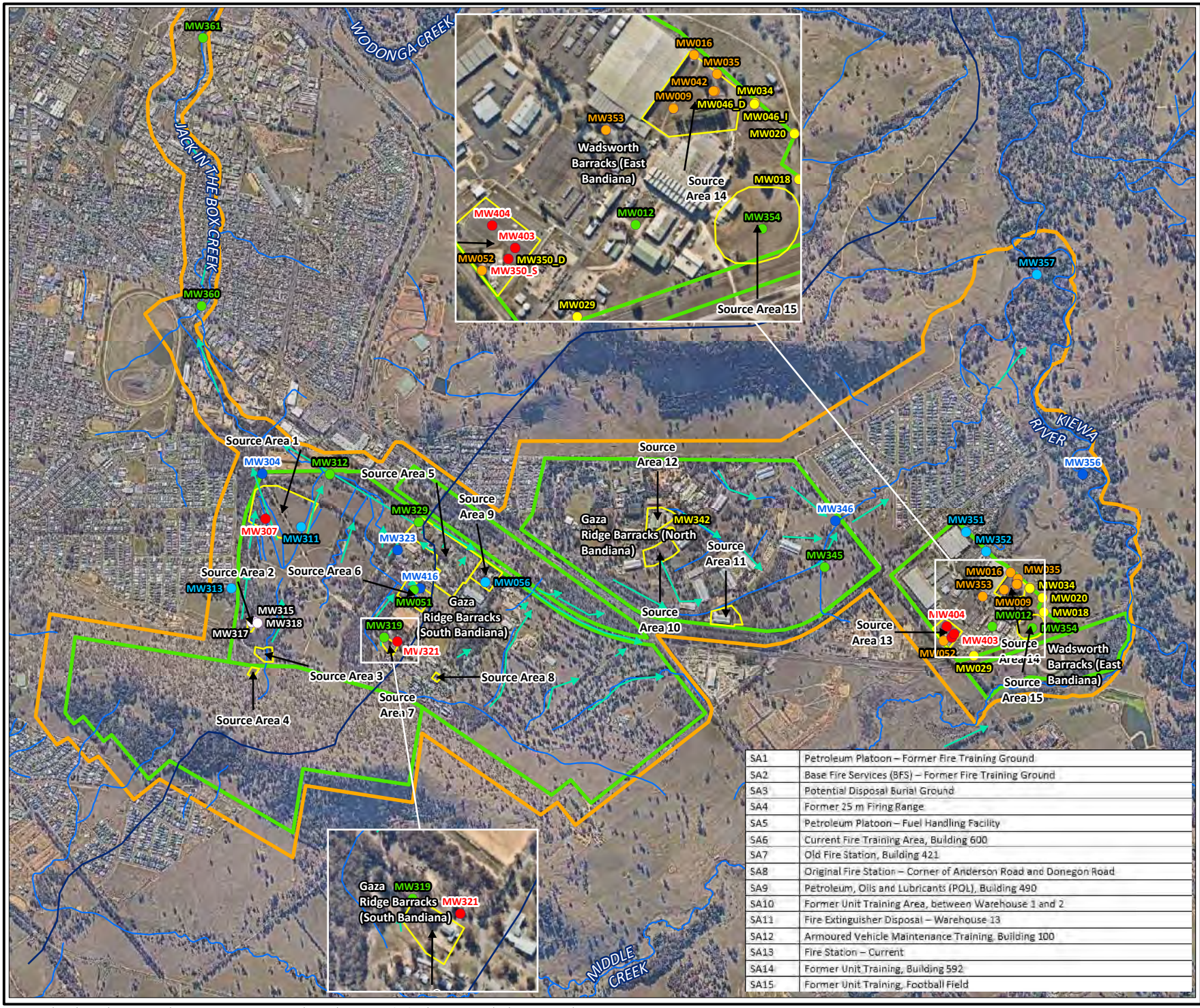
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER CONTOURS (OCTOBER 2023)

FIGURE 10A

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_010a_OMP_Groundwater Contours October 2023
Reference: www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- 7 to 70µg/L
- >70 µg/L
- Not Sampled

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:30,000

0 500 1,000

metres

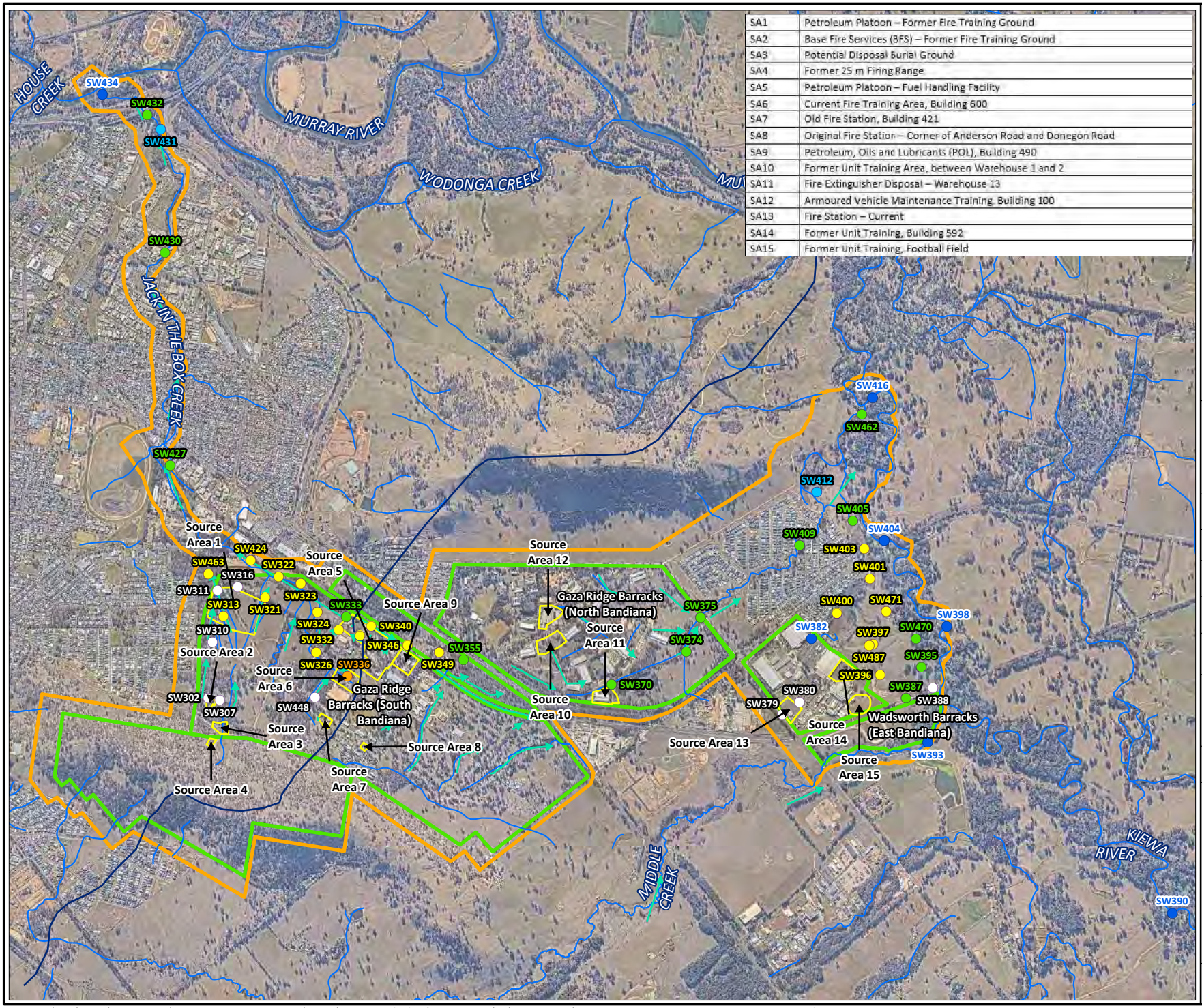
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

GROUNDWATER SUM OF PFHxS +PFOS CONCENTRATIONS (OCTOBER 2023)

FIGURE 10B

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_010b_OMP Groundwater PFOS+PFHxS Concentrations October 2023
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



SA1	Petroleum Platoon – Former Fire Training Ground
SA2	Base Fire Services (BFS) – Former Fire Training Ground
SA3	Potential Disposal Burial Ground
SA4	Former 25 m Firing Range
SA5	Petroleum Platoon – Fuel Handling Facility
SA6	Current Fire Training Area, Building 600
SA7	Old Fire Station, Building 421
SA8	Original Fire Station – Corner of Anderson Road and Donegon Road
SA9	Petroleum, Oils and Lubricants (POL), Building 490
SA10	Former Unit Training Area, between Warehouse 1 and 2
SA11	Fire Extinguisher Disposal – Warehouse 13
SA12	Armoured Vehicle Maintenance Training, Building 100
SA13	Fire Station – Current
SA14	Former Unit Training, Building 592
SA15	Former Unit Training, Football Field

Legend

- Management Area
- Bandiana Military Area
- Source Areas
- Stormwater Divide
- Watercourse
- Drainage Flow Direction

Sum of PFHxS+PFOS Concentrations

- Below LOR
- LOR to 0.07µg/L
- 0.07 to 0.7µg/L
- 0.7 to 7µg/L
- 7 to 70µg/L
- Not Sampled

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final | Date: 24-Jan-2025

Drawn By: JStrauss | Checked By: JS

Scale 1:36,000

0 600 1,200

metres

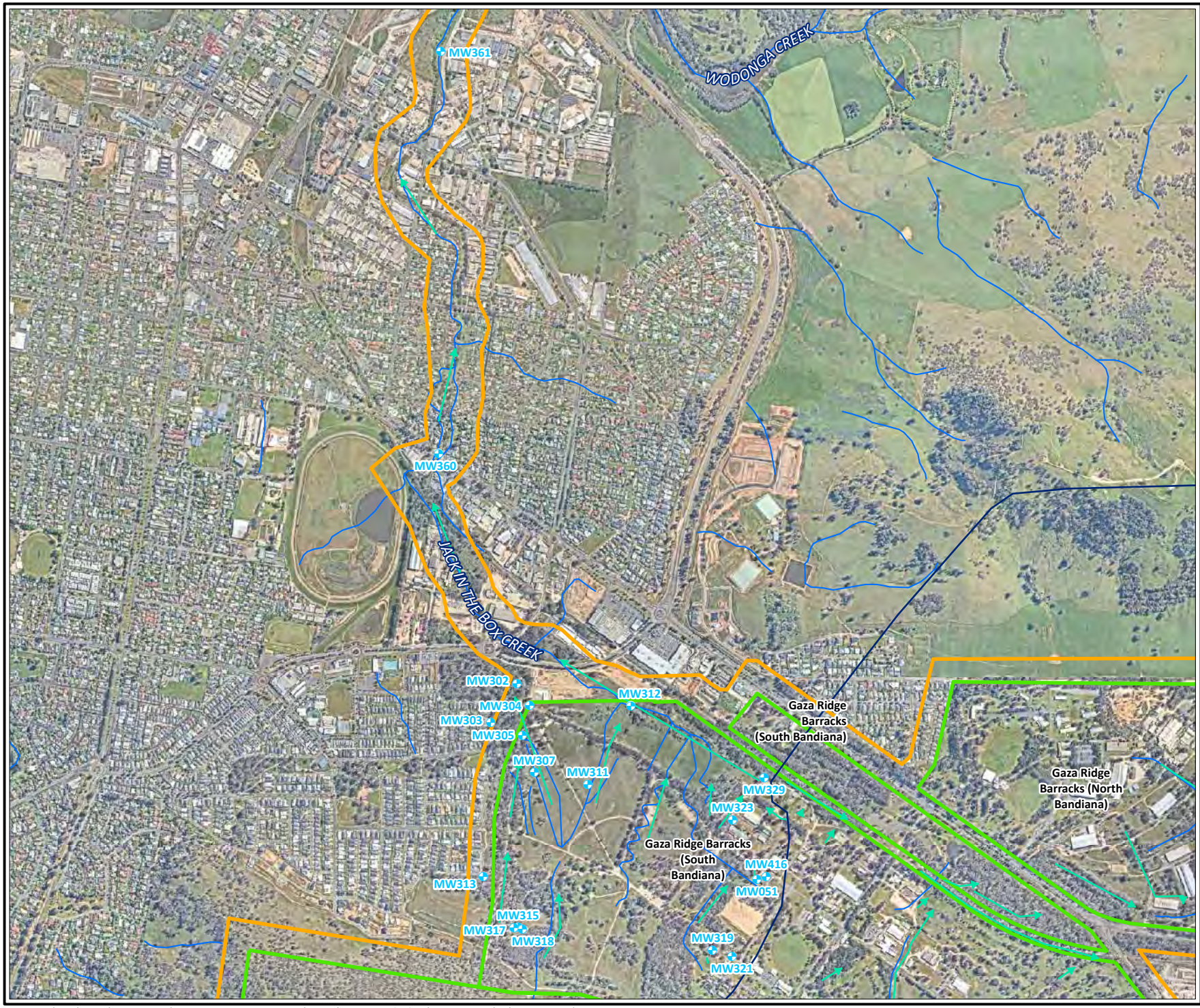
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

SURFACE WATER SUM OF PFHxS +PFOS CONCENTRATIONS (OCTOBER 2023)

FIGURE 10C

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana_OMR.aprx; Name:61395_010c_OMP Surface Water PFOS+PFHxS Concentrations October 2023
Reference: ESRI Topographic Basemap - Accessed Imagery: 11/09/2024 & www.nearmap.com - Imagery Date: 22/06/2024



Legend

- Management Area
- Bandiana Military Area
- Drainage Channel
- Stormwater Divide
- Watercourse
- Shepparton Colluvium - Shallow Aquifer

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JS	Checked By: JS

Scale 1:20,000

0 450 900

metres

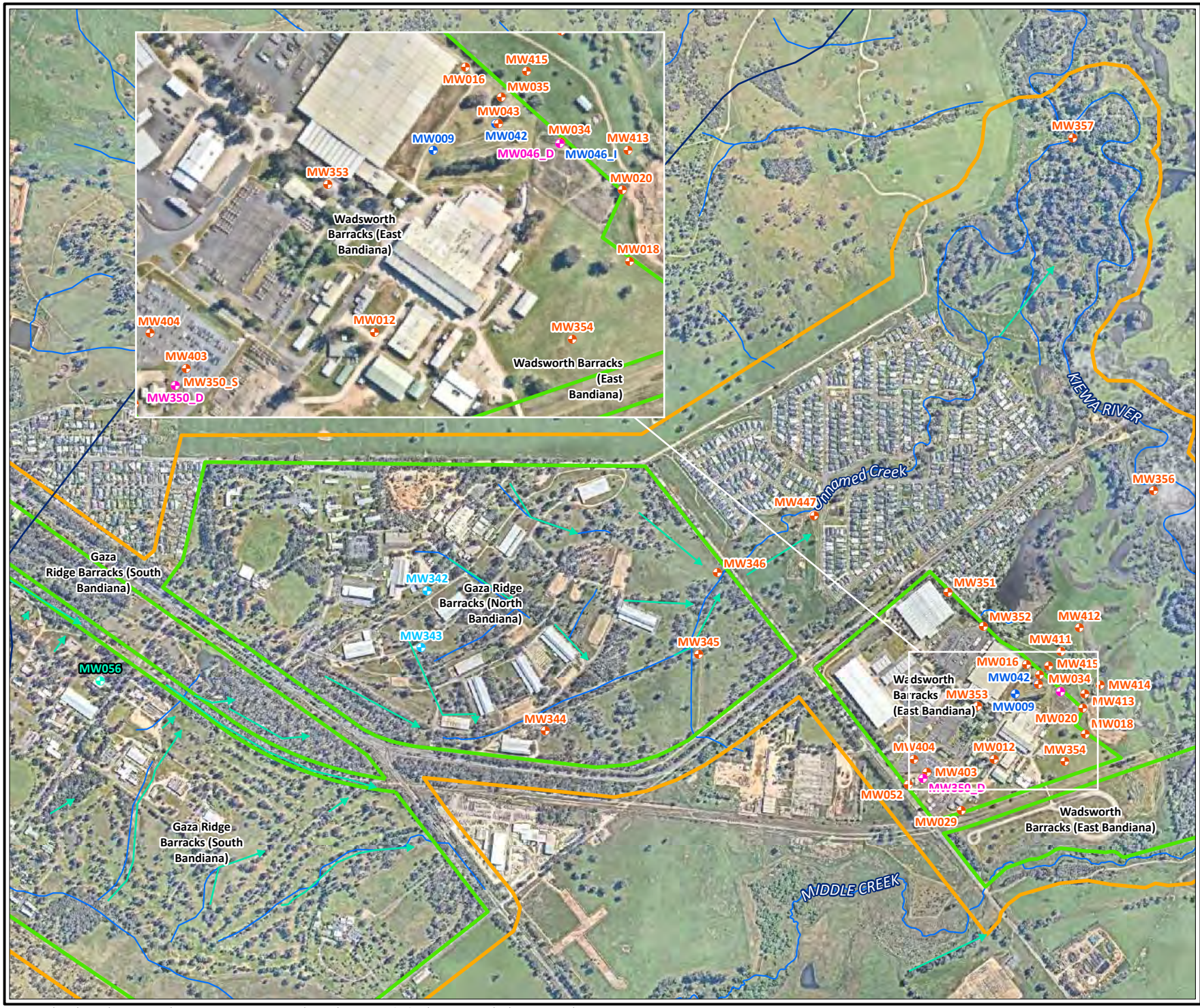
Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

PROPOSED AMENDED JACK IN THE BOX CREEK CATCHMENT OMP GROUNDWATER MONITORING LOCATIONS

FIGURE 11A

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana OMP Revision.aprx; Name:61395_04a_Jack In The Box Jack In The Box Groundwater Monitoring Locations
Reference: ESRI Topographic Basemap - Accessed Imagery: 08/11/2024 & www.nearmap.com - Imagery Date: 10/12/2023



Legend

- Management Area
- Bandiana Military Area
- Drainage Channel
- Stormwater Divide
- Watercourse
- Perched Water
- Shepparton Colluvium - Shallow Aquifer
- Shepparton and Coonambidgal Fluvium -Intermediate Aquifer
- Shepparton and Coonambidgal Fluvium -Shallow Aquifer
- Shepparton and Coonambidgal Fluvium -Deep Aquifer

JBS&G

Job No: 61395

Client: Department of Defence

Version: Final	Date: 24-Jan-2025
Drawn By: JS	Checked By: JS

Scale 1:17,000

0 350 700

metres

Coord. Sys. GDA 1994 MGA Zone 55

Bandiana Military Area

PROPOSED AMENDED KIEWA RIVER CATCHMENT OMP GROUNDWATER MONITORING LOCATIONS

FIGURE 11B

File Name: C:\Users\jstrauss\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Department of Defence\61395_Bandiana\GIS\02_MapProjects\61395_DoD_Bandiana OMP Revision.aprx; Name:61395_04b_Kiewa River Groundwater Monitoring Locations
Reference: ESRI Topographic Basemap - Accessed Imagery: 08/11/2024 & www.nearmap.com - Imagery Date: 10/12/2023

Tables

Tables provided include:

- T1 – OMP Groundwater Analytical Summary Table (2021-2023)
- T2 – OMP Surface Water Analytical Summary Table (2021-2023)
- T3 – OMP Sediment Analytical Summary Table (2021-2023)

©JBS&G Australia Pty Ltd

T1: OMP Groundwater Analytical Summary Table (2021-2023)

							PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
							Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
							µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR							0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.02	0.05	0.02	0.05	0.05	0.02	0.05	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																		0.56																		0.07		
PFAS NEMP 2020 Freshwater 95%											0.13							220																				
PFAS NEMP 2020 Freshwater 99%											0.00023							19																				
PFAS NEMP 2020 Recreational Water																		10																		2		
Location Code	**Field ID**	**Aquifer**	**Location**	**Date**	**Sample Event**	**Lab Report Number**																																
MW009	0445_MW009_211116	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.95	0.86	4.14	0.45	2.67	-	<0.02	0.2	0.34	1.36	0.25	0.43	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.81	10.3	11.6
MW009	0445_MW009_220505	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	0.99	1.11	6.19	0.37	3.50	-	<0.02	0.2	0.40	1.32	0.29	0.44	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.69	13.4	14.9
MW009	0445_MW009_221013	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.82	0.82	5.15	0.32	3.16	-	<0.02	0.2	0.28	1.22	0.20	0.35	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.31	11.5	12.6
MW009	0445_MW009_230505	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.48	0.53	3.25	0.25	4.07	-	<0.02	<0.1	0.19	0.87	0.14	0.25	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.10	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.32	9.35	10.1
MW009	0445_MW009_231026	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	1.35	1.55	10.2	0.81	9.98	-	<0.02	0.3	0.60	2.57	0.38	0.71	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.28	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	20.2	26.4	28.7
MW009	0445_QC107_231026	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	1.24	1.30	8.35	0.70	8.79	-	<0.02	0.2	0.52	2.31	0.34	0.63	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.25	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	17.1	22.6	24.6
MW009	0445_QC207_231026	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	1039507	1.1	1.1	7.8	0.74	9.5	0.01	<0.01	0.30	0.44	1.8	0.31	0.61	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.21	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	17.3	22.07	24.36
MW012	0445_MW012_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	12 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	0.36	<0.02	0.07	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.43	0.43
MW012	0445_MW012_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	0.02	0.03	0.45	<0.02	0.09	-	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.54	0.59	0.62
MW012	0445_MW012_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.03	<0.02	0.15	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.21	0.21
MW012	0445_MW012_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.23	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.31	0.31	0.31
MW012	0445_MW012_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.24	<0.02	0.17	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.41	0.41	0.41
MW016	0445_MW016_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.40	0.40	3.04	0.25	4.38	-	<0.02	<0.1	0.16	0.68	0.15	0.31	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.42	9.12	9.77
MW016	0445_MW016_220509	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	09 May 2022	E2 - May 2022	EM2208649	0.45	0.42	3.22	0.27	6.14	-	<0.02	<0.1	0.16	0.61	0.16	0.33	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.36	11.1	11.8
MW016	0445_MW016_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.40	0.42	2.85	0.21	4.93	-	<0.02	<0.1	0.13	0.65	0.14	0.29	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.78	9.39	10.0
MW016	0445_MW016_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.23	0.22	1.52	0.12	2.38	-	<0.02	<0.1	0.08	0.38	0.08	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.9	4.82	5.16
MW016	0445_MW016_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.52	0.54	3.66	0.36	6.78	-	<0.02	<0.1	0.19	0.94	0.19	0.37	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	10.4	12.6	13.6
MW018	0445_MW018_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.06	0.05	0.35	<0.02	0.32	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.67	0.73	0.78
MW018	0445_MW018_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	0.06	0.05	0.33	<0.02	0.33	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.66	0.72	0.77
MW018	0445_MW018_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.02	<0.02	0.10	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.18	0.18
MW018	0445_MW018_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.05	0.04	0.32	<0.02	0.35	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.67	0.72	0.76
MW018	0445_MW018_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.09	0.05	0.42	<0.02	0.39	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.81	0.90	0.95
MW020	0445_MW020_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.15	0.16	1.84	0.09	1.54	-	<0.02	<0.1	0.05	0.23	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.38	3.91	4.16
MW020	0445_MW020_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	0.13	0.15	1.48	0.07	1.29	-	<0.02	<0.1	0.05	0.17	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.77	3.20	3.42
MW020	0445_MW020_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.09	0.11	1.27	0.06	1.15	-	<0.02	<0.1	0.03	0.15	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.42	2.74	2.91
MW020	0445_MW020_230506	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	06 May 2023	E4 - May 2023	EM2308015	0.08	0.10	1.10	0.06	0.93	-	<0.02	<0.1	0.03	0.13	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.03	2.31	2.47
MW020	0445_MW020_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.09	0.11	1.78	0.09	1	-	<0.02	<0.1	0.04	0.19	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.78	3.18	3.38
MW029	0445_MW029_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	0.13	0.13	0.71	0.02	0.44	-	<0.02	<0.1	0.16	0.25	0.08	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.15	1.83	1.98
MW029	0445_MW029_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	0.18	0.14	0.64	<0.02	0.64	-	<0.02	<0.1	0.22	0.29	0.10	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.28	2.12	2.26
MW029	0445_MW029_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.06	0.06	0.44	<0.02	0.43	-	<0.02	<0.1	0.07	0.13	0.04	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.87	1.20	1.26
MW029	0445_MW029_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.12	0.13	0.57	<0.02	0.46	-	<0.02	<0.1	0.12	0.26	0.07	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.03	1.64	1.77
MW029	0445_MW029_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.10	0.10	0.58	<0.02	0.37	-	<0.02	<0.1	0.12	0.25	0.07	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.95	1.53	1.63
MW034	0445_MW034_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.26	0.21	1.60	0.13	1.86	-	<0.02	<0.1	0.09	0.34	0.06	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.46	4.33	4.67
MW034	0445_MW034_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	0.14	0.14	1.00	0.08	1.57	-	<0.02	<0.1	0.06	0.16	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.57	3.03	3.25
MW034	0445_QC106_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	0.13	0.14	1.08	0.07	1.27	-	<0.02	<0.1	0.05	0.16	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.35	2.78	2.99
MW034	0445_QC206_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	886780	0.14	0.15	1.2	0.06	2.1	<0.01	<0.01	<0.05	0.05	0.20	0.04	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.3	3.82	4.09
MW034	0445_MW034_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.09	0.09	0.76	0.05	1.17	-	<0.02	<0.1	0.03	0.12	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.93	2.24	2.38
MW034	0445_MW034_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.05	0.06	0.48	0.04	1.02	-	<0.02	<0.1	<0.02	0.08	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.5	1.66	1.76
MW034	0445_QC109_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.05	0.06	0.48	0.03	0.97	-	<0.02	<0.1	<0.02	0.08	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.45	1.61	1.70
MW034	0445_QC209_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	987797	0.05	0.05	0.49	0.04	1.1	<0.01	<0.01	<0.05	0.02	0.07	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.59	1.77	1.87
MW034	0445_MW034_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.04	0.04	0.51	0.04	0.85	-	<0.02	<0.1	<0.02	0.07	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.36	1.50	1.58
MW035	0445_MW035_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.93	0.87	4.13	0.39	3.32	-	<0.02	0.2	0.34	1.41	0.26	0.45	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.45	11.0	12.3
MW035	0445_MW035_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	1.16	1.27	7.38	0.49	5.07	-	<0.02	0.2	0.48	1.62	0.35	0.59	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.10	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	12.4	17.0	18.7
MW035	0445_MW035_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	1.29	1.39	8.51	0.58	5.96	-	<0.02	0.2	0.44	1.98	0.34	0.59	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.18	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	14.5	19.5	21.5
MW035	0445_MW035_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	1.07	1.27	7.02	0.56	7.66	-	<0.02	0.2	0.44	1.88	0.30	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.21	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	14.7	19.3	21.1
MW035	0445_QC106_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	1.21	1.06	7.35	0.54	7.41	-	<0.02	0.3	0.47	1.68	0.34	0.56	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.25	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	14.8	19.6	21.2
MW035	0445_QC206_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	987797	1.1	1.1	7.6	0.78	8.3	<0.01	<0.01	0.27	0.39	1.6	0.30	0.65	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.21	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	15.9	20.42	22.75
MW035	0445_MW035_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	1.08	1.24	7.21	0.58	8.75	-	<0.02	0.2	0.40	1.71	0.30	0.53	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.20	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	16	20.4	22.2
MW042	0445_MW042_211111	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	12 Nov 2021	E1 - Nov 2021	EM2122518	0.92	1.13	5.05	0.49	3.61	-	<0.02	0.2	0.35	1.62	0.31	0.49	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.07	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.66	12.6	14.2
MW042	0445_QC104_211111	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	12 Nov 2021	E1 - Nov 2021	EM2122518	0.99	0.81	5.49	0.38	3.3	-	<0.04	<0.2	0.33	1.52	0.24	0.46	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.05	0.05	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	8.79	12.4	13.6
MW042	QC204_211111	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	841785	1.2	0.96	7.0	0.57	4.3	<0.01	<0.01	0.33	0.36	1.9	0.32	0.65	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.09	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	11.3	16.15	18.21
MW042	0445_MW042_220503	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	1.42	1.57	9.35	0.56	6.03	-	<0.02	0.3	0.59	2.02	0.43	0.66	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.18	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	15.4	21.0	23.1
MW042	0445_MW042_221013	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	1.29	1.40	8.70	0.59	6.41	-	<0.02	0.2	0.44	2.13	0.34	0.6	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.20	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	15.1	20.3	22.3
MW042	0445_MW042_230505	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	1.04	1.00	6.49	0.54	7.12	-	<0.02	0.2	0.40	1.72	0.28	0.48	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.22	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	13.6	18.0	19.5
MW042	0445_MW042_231026	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	1.00	1.08	6.87	0.61	7.94	-	<0.02	0.2	0.40	1.72	0.28	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.24	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	14.8	19.2	20.8
MW042	0445_QC108_231026	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.93	1.05	6.48	0.53	7.03	-	<0.02	0.2	0.37	1.59	0.26	0.46	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.21	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	13.5	17.5	19.1
MW042	0445_QC208_231026	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	1039507	0.87	1.1	5.8	0.60	7.4	<0.01	<0.01	0.22	0.33	1.3	0.24	0.45	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.18	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	13.2	16.79	18.82
MW043	0445_MW043_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	1.60	1.73	7.54	0.81	5.33	-	<0.02	0.4	0.61	2.51	0.43	0.76	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.16	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	12.9	19.3	21.9
MW043	0445_MW043_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	1.52	1.63	9.65	0.59	6.91	-	<0.02	0.3	0.64	2.04	0.44	0.7	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.24	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	16.6	22.4	24.7
MW043	0445_MW043_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	1.14	1.20	7.92	0.54	8.1	-	<0.02	0.2	0.41	1.81	0.31	0.53	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.23	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	16	20.6	22.4
MW043	0445_MW043_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.75	0.74	4.68	0.40	5.69	-	<0.02	0.1	0.31	1.26	0.21	0.36	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.22	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	10.4	13.6	14.7
MW043	0445_MW043_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.70	0.74	4.74	0.46	6.46	-	<0.02	0.1	0.30	1.22	0.20	0.37	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.19	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	11.2	14.3	15.5
MW046	0445_MW046_D_211116	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.40	0.28	2.26	0.19	3.24	-	<0.02	<0.1	0.16	0.52	0.10	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.11	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.5	6.98	7.45
MW046	0445_MW046D_220503	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	0.37	0.30	2.09	0.17	2.88	-	<0.02	<0.1	0.14	0.41	0.09	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.97	6.23	6.70
MW046	0445_MW046_D_221013	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.13	0.13	1.17	0.07	1.6	-	<0.02	<0.1	0.05	0.21	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.77	3.25	3.45
MW046	0445_MW046_D_230505	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.11	0.15	1.17	0.07	1.65	-	<0.02	<0.1	0.04	0.18	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.82	3.22	3.44
MW046	0445_MW046_D_231026	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.15	0.17	1.80	0.11	2.46	-	<0.02	<0.1	0.05	0.26	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.26	4.83	5.11
MW046	0445_MW046_I_211116	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.38	0.30	2.30	0.19	2.96	-	<0.02	<0.1	0.15	0.50	0.09	0.17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.26	6.64	7.13
MW046	0445_MW046I_220503	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	0.20	0.20	1.42	0.11	2.17	-	<0.02	<0.1	0.08	0.24	0.06	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.59	4.27	4.58
MW046	0445_MW046_I_221013	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.13	0.14	1.22	0.08	1.76	-	<0.02	<0.1	0.04	0.20	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.98	3.44	3.66
MW046	0445_MW046_I_230505	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.12	0.14	1.10	0.07	1.54	-	<0.02	<0.1	0.04	0.19	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.64	3.06	3.27
MW046	0445_MW046_I_231026	Shepparton and Coonambigdal Fluvium - Intermediate Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.15	0.15	1.66	0.10	2.48	-	<0.02	<0.1	0.05	0.26	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.14	4.71	4.96
MW051	0445_MW051_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW051	0445_QC100_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW051	QC200_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	841785	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.1
MW051	0445_MW051_20221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	<0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	0.01
MW051	0445_QC104_20221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	<0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	0.01
MW051	0445_QC204_221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	932350	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.1
MW051	0445_MW051_231025	Shepparton Colluvium - Shallow Aquifer	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.05	<0.02	0.08	-	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.16	0.16
MW051	0445_MW051_231128	Shepparton Colluvium - Shallow Aquifer	South Bandiana	28 Nov 2023	E5 - Oct 2023	EM2321318	<0.02	<0.02	0.07	<0.02	0.09	-	<0.02	<0.1	0.03	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.25	0.25
MW052	0445_MW052_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.96	0.86	3.81	0.50	7.23	-	<0.02	0.3	0.39	1.60	0.36	0.67	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	11	15.3	16.7
MW052	0445_MW052_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	1.31	1.20	5.08	0.32	9.31	-	<0.02	0.3	0.50	2.14	0.61	0.63	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	14.4	19.9	21.4
MW052	0445_MW052_221014	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.60	0.57	3.30	0.32	10.4	-	<0.02	0.2	0.20	1.04	0.28	0.46	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	13.7	16.5	17.4
MW052	0445_MW052_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	1.80	1.93	8.79	0.47	10.7	-	0.04	0.4	0.54	2.92	0.72	0.81	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	19.5	26.7	29.1
MW052	0445_MW052_231025	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	15.1	19.5	143	6.87	31.2	-	0.03	2.0	4.00	23.4	5.31	10.6	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	174	235	261
MW052	0445_MW052_231127	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	27 Nov 2023	E5 - Oct 2023	EM2321318	1.37	1.44	7.54	0.50	8.59	-	<0.02	0.3	0.42	2.12	0.54	0.78	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	16.1	21.7	23.6
MW052	0445_MW052_231128	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	28 Nov 2023	E5 - Oct 2023	EM2321318	1.51	1.72	9.49	0.68	10.4	-	<0.02	0.3	0.44	2.33	0.61	0.92	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	19.9	26.0	28.4
MW056	0445_MW056_211111	Perched Water	South Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	0.18	0.19	0.80	0.07	0.7	-	<0.02	<0.1	0.02	0.14	0.07	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.5	2.06	2.32
MW056	0445_MW056_221012	Perched Water	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	0.09	0.10	0.42	0.03	0.66	-	<0.02	<0.1	<0.02	0.07	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.08	1.35	1.48

T1: OMP Groundwater Analytical Summary Table (2021-2023)

Location Code	Field ID	Aquifer	Location	Date	Sample Event	Lab Report Number	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
							PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
							µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR							0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.02	0.05	0.02	0.05	0.05	0.02	0.05	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																		0.56																		0.07		
PFAS NEMP 2020 Freshwater 95%											0.13							220																				
PFAS NEMP 2020 Freshwater 99%											0.00023							19																				
PFAS NEMP 2020 Recreational Water																		10																		2		
MW056	0445_QC105_20221012	Perched Water	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	0.05	0.05	0.23	<0.02	0.3	-	<0.02	<0.1	<0.02	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.53	0.65	0.70
MW056	0445_QC205_221012	Perched Water	South Bandiana	12 Oct 2022	E3 - Oct 2022	932350	0.12	0.12	0.57	0.04	0.84	<0.01	<0.01	<0.05	0.02	0.09	0.04	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.41	1.78	1.95
MW304	0445_MW304_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW304	0445_MW304_220504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.09	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	0.15
MW304	0445_QC107_220504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.05	<0.02	0.07	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	0.12
MW304	0445_QC207_220504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2022	E2 - May 2022	886780	<0.01	<0.01	0.06	<0.01	0.1	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.16	0.16	0.16
MW304	0445_MW304_221010	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	0.05	0.03	0.32	0.06	0.3	-	<0.02	<0.1	<0.02	0.05	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.10	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.62	0.85	0.94
MW304	0445_MW304_230504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	0.03	<0.02	0.20	<0.02	0.14	-	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	0.46	0.46
MW304	0445_QC105_230504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	0.02	<0.02	0.14	<0.02	0.1	-	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.28	0.28
MW304	0445_QC205_230504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2023	E4 - May 2023	987797	0.02	0.02	0.17	0.02	0.15	<0.01	<0.01	<0.05	0.01	0.03	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.32	0.4	0.44
MW304	0445_MW304_231026	Shepparton Colluvium - Shallow Aquifer	South Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW307	0445_MW307_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	87.7	61.2	352	28.4	70.4	-	<0.04	7.1	57.5	140	23.0	34.2	0.48	<0.04	<0.04	<0.04	<0.04	<0.09	0.90	65.4	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	422	837	928
MW307	0445_MW307_211222	Shepparton Colluvium - Shallow Aquifer	South Bandiana	22 Dec 2021	E1 - Nov 2021	EM2125903	107	97.6	496	41.2	94.3	-	<0.05	13.4	71.3	170	31.5	44.2	0.60	<0.05	<0.05	<0.05	<0.05	<0.14	0.90	100	<0.05	<0.05	<0.05	<0.14	<0.05	<0.14	<0.14	<0.05	<0.14	590	1,130	1,270
MW307	0445_QC101_211222	Shepparton Colluvium - Shallow Aquifer	South Bandiana	22 Dec 2021	E1 - Nov 2021	EM2125903	110	85.9	486	38.6	91	-	<0.05	12.4	71.0	168	32.1	44.8	0.60	<0.05	<0.05	<0.05	<0.05	<0.13	0.91	102	<0.05	<0.05	<0.05	<0.13	<0.05	<0.13	<0.13	<0.05	<0.13	577	1,120	1,240
MW307	0445_QC201_211222	Shepparton Colluvium - Shallow Aquifer	South Bandiana	22 Dec 2021	E1 - Nov 2021	852797	180	120	790	49	160	<0.01	<0.01	37	89	240	42	66	0.53	<0.01	<0.01	<0.01	<0.01	<0.01	1.5	100	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	950	1,704.02	1,974.05
MW307	0445_MW307_220504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	119	115	555	55.6	88.8	-	<0.04	16.1	72.7	221	35.5	49.4	0.62	<0.04	<0.04	<0.04	<0.04	<0.09	1.10	116	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	644	1,270	1,440
MW307	0445_MW307_221010	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	10.9	10.6	58.3	5.98	13.7	-	<0.02	0.9	7.32	17.3	3.06	4.88	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	0.11	11.6	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	72	128	145
MW307	0445_MW307_230504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	76.5	63.1	370	36.3	84.1	-	<0.04	10.0	50.2	122	22.3	35.9	0.50	<0.04	<0.04	<0.04	<0.04	<0.09	0.58	82.8	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	454	854	954
MW307	0445_MW307_231026	Shepparton Colluvium - Shallow Aquifer	South Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	91.3	85.6	479	40.4	101	-	<0.04	9.7	60.6	143	28.1	42.2	0.66	<0.04	<0.04	<0.04	<0.04	<0.09	0.90	103	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	580	1,060	1,180
MW311	0445_MW311_211117	Shepparton Colluvium - Shallow Aquifer	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW311	0445_MW311_221010	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW311	0445_MW311_231027	Shepparton Colluvium - Shallow Aquifer	South Bandiana	27 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
MW312	0445_MW312_21110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	0.02	0.14	<0.02	0.02	-	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.20	0.22
MW312	0445_MW312_220504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.10	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.10	0.10
MW312	0445_MW312_221010	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.11	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	0.15
MW312	0445_MW312_230504	Shepparton Colluvium - Shallow Aquifer	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	0.02	0.04	0.24	0.02	0.12	-	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.36	0.43	0.49
MW312	0445_MW312_231026	Shepparton Colluvium - Shallow Aquifer	South Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.03	0.03	0.24	<0.02	0.13	-	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.45	0.48
MW313	0445_MW313_211111	Shepparton Colluvium - Shallow Aquifer	Off-base	11 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW313	0445_MW313_221015	Shepparton Colluvium - Shallow Aquifer	Off-base	15 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW313	0445_MW313_231027	Shepparton Colluvium - Shallow Aquifer	Off-base	27 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW315	0445_MW315_211117	Shepparton Colluvium - Shallow Aquifer	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW319	0445_MW319_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	0.09	<0.02	0.28	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.37	0.37
MW319	QC201_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	841785	0.01	<0.01	0.12	<0.01	0.39	<0.01	<0.01	<0.05	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.51	0.55	0.55
MW319	0445_QC101_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	0.08	<0.02	0.31	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.39	0.39	0.39
MW319	0445_MW319_221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.06	<0.02	0.2	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.26	0.26	0.26
MW319	0445_QC103_20221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.07	<0.02	0.24	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.31	0.31	0.31
MW319	0445_QC203_221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	932350	<0.01	<0.01	0.06	<0.01	0.22	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.28	0.28	0.28
MW319	0445_MW319_231025	Shepparton Colluvium - Shallow Aquifer	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.04	<0.02	0.18	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.22	0.22
MW319	0445_QC106_231025	Shepparton Colluvium - Shallow Aquifer	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.04	<0.02	0.17	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.21	0.21
MW319	0445_QC206_231025	Shepparton Colluvium - Shallow Aquifer	South Bandiana	25 Oct 2023	E5 - Oct 2023	1039507	<0.01	<0.01	0.03	<0.01	0.14	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	0.17	0.17
MW321	0445_MW321_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	0.19	0.04	0.73	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.92	0.92	0.96
MW321	0445_MW321_221210	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.17	0.03	0.58	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.75	0.75	0.78
MW321	0445_QC102_20221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.15	0.03	0.55	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.7	0.70	0.73
MW321	0445_QC202_221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	932350	<0.01	<0.01	0.02	<0.01	0.07	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	0.09	<0.1
MW321	0445_MW321_231025	Shepparton Colluvium - Shallow Aquifer	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	3.40	6.08	195	59.5	983	-	<0.04	0.2	1.66	11.2	2.18	11.6	1.96	<0.04	<0.04	<0.04	<0.04	<0.09	<0.05	1.72	1.85	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	1,180	1,210	1,280
MW321	0445_MW321_231127	Shepparton Colluvium - Shallow Aquifer	South Bandiana	27 Nov 2023	E5 - Oct 2023	EM2321318	2.38	3.91	117	31.4	491	-	<0.02	0.3	0.96	6.08	1.42	9.16	1.27	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	1.14	0.62	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	608	630	667
MW321	0445_MW321_231128	Shepparton Colluvium - Shallow Aquifer	South Bandiana	28 Nov 2023	E5 - Oct 2023	EM2321318	3.89	8.84	164	40.6	820	-	<0.02	0.4	1.62	11.0	2.14	11.2	2.24	0.04	<0.02	<0.02	<0.02	<0.05	<0.05	1.68	1.46	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	984	1,020	1,070
MW321	0445_QC101_231128	Shepparton Colluvium - Shallow Aquifer	South Bandiana	28 Nov 2023	E5 - Oct 2023	EM2321318	2.28	5.21	115	31.7	455	-	<0.02	0.3	0.93	5.78	1.32	7.68	1.09	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	1.06	0.59	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	570	590	628
MW321	0445_QC201_231128	Shepparton Colluvium - Shallow Aquifer	South Bandiana	28 Nov 2023	E5 - Oct 2023	1049115	1.8	2.6	99	20	480	<1	<1	0.28	0.86	5.0	1.2	5.8	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	1.0	0.33	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	579	595.27	618.79
MW323	0445_MW323_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW323	0445_MW323_221210	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW323	0445_MW323_231025	Shepparton Colluvium - Shallow Aquifer	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW325	0445_MW325_221014	Shepparton Colluvium - Shallow Aquifer	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW326	0445_MW326_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	0.46	0.11	0.26	<0.02	0.03	-	<0.02	<0.1	0.05	0.10	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.90	1.01
MW328	0445_MW328_221014	Shepparton Colluvium - Shallow Aquifer	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.05	<0.02	0.13	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.18	0.18
MW329	0445_MW329_21110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	0.04	0.03	0.14	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.21	0.24
MW329	0445_QC102_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	0.04	0.03	0.14	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.21	0.24
MW329	QC202_211110	Shepparton Colluvium - Shallow Aquifer	South Bandiana	10 Nov 2021	E1 - Nov 2021	841785	0.04	0.03	0.16	<0.01	0.03	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.19	0.23	0.28
MW329	0445_MW329_221012	Shepparton Colluvium - Shallow Aquifer	South Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	0.20	0.10	0.34	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.63	0.73
MW329	0445_MW329_231025	Shepparton Colluvium - Shallow Aquifer	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	0.14	0.09	0.36	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.42	0.56	0.65
MW342	0445_MW342_211111	Shepparton Colluvium - Shallow Aquifer	North Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	0.88	0.53	4.31	0.36	9.21	-	<0.02	<0.1	0.24	0.95	0.08	0.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	13.5	15.9	16.8
MW342	0445_MW342_211222	Shepparton Colluvium - Shallow Aquifer	North Bandiana	22 Dec 2021	E1 - Nov 2021	EM2125903	0.94	0.78	5.00	0.36	4.15	-	<0.02	0.1	0.24	1.10	0.08	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.15	11.8	13.0
MW342	0445_QC100_211222	Shepparton Colluvium - Shallow Aquifer	North Bandiana	22 Dec 2021	E1 - Nov 2021	EM2125903	0.89	0.70	5.11	0.37	4.37	-	<0.02	0.1	0.24	1.13	0.07	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.48	12.1	13.2
MW342	0445_QC200_211222	Shepparton Colluvium - Shallow Aquifer	North Bandiana	22 Dec 2021	E1 - Nov 2021	852797	1.1	1.0	6.8	0.41	5.8	<0.01	<0.01	0.20	0.30	1.4	0.09	0.32	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	12.6	16.01	17.88
MW342	0445_MW342_220506	Shepparton Colluvium - Shallow Aquifer	North Bandiana	06 May 2022	E2 - May 2022	EM2208381	0.68	0.51	4.59	0.26	4	-	<0.02	<0.1	0.22	0.81	0.07	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.59	10.5	11.3
MW342	0445_QC111_220506	Shepparton Colluvium - Shallow Aquifer	North Bandiana	06 May 2022	E2 - May 2022	EM2208381	0.74	0.53	4.61	0.26	3.97	-	<0.02	<0.1	0.22	0.75	0.08	0.17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.58	10.5	11.3
MW342	0445_QC211_220506	Shepparton Colluvium - Shallow Aquifer	North Bandiana	06 May 2022	E2 - May 2022	886780	0.91	0.75	6.4	0.28	4.9	<0.01	<0.01	0.14	0.19	0.88	0.07	0.21	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	11.3	13.7	15.27
MW342	0445_MW342_221015	Shepparton Colluvium - Shallow Aquifer	North Bandiana	15 Oct 2022	E3 - Oct 2022	EM2220286	0.46	0.39	2.89	0.14	3.04	-	<0.02	<0.1	0.12	0.58	0.04	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.93	7.24	7.77
MW342	0445_MW342_230504	Shepparton Colluvium - Shallow Aquifer	North Bandiana	04 May 2023	E4 - May 2023	EM2308015	0.35	0.37	2.25	0.11	2.56	-	<0.02	<0.1	0.09	0.39	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.81	5.75	6.23
MW342	0445_MW342_231026	Shepparton Colluvium - Shallow Aquifer	North Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.30	0.30	2.28	0.11	3.37	-	<0.02	<0.1	0.08	0.36	0.03	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.65	6.51	6.92
MW345	0445_MW345_211117	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.06	0.05	0.23	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.31	0.36
MW345	0445_MW345_220506	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	06 May 2022	E2 - May 2022	EM2208381	0.04	0.03	0.21	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.28	0.31
MW345	0445_MW345_221012	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	0.05	0.04	0.24	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.32	0.37	0.41
MW345	0445_MW345_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.05	0.04	0.23	<0.02	0.09	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.32	0.37	0.41
MW345	0445_MW345_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.06	0.04	0.24	<0.02	0.1	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	0.40	0.44
MW346	0445_MW346_211117	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW346	0445_MW346_220506	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	06 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW346	0445_MW346_221012	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.07	<0.02	0.1	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.17	0.17
MW346	0445_MW346_230504	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	04 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
MW346	0445_MW346_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	North Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW350	0445_MW350_S_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	3.62	2.60	33.4	2.86	15.3	-	<0.04	0.6	1.39	5.72	1.16	3.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.05	0.37	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	48.7	64.6	70.1
MW350	0445_QC105_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	3.65	2.70	33.7	2.91	15.2	-	<0.04	0.9	1.45	5.86	1.24	3.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.05	0.29	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	48.9	65.4	71.0
MW350	QC205_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	841785	4.0	5.0	50	2.8	19	<0.01	<0.01	0.95	1.3	7.0	1.1	2.8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.43	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	69	86.58	95.78
MW350	0445_MW350_S_220506	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	06 May 2022	E2 - May 2022	EM2208381	2.43	2.69	25.6	2.32	17.8	-	<0.02	0.8	1.71	4.45	1.33	2.67	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	1.22	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	43.4	58.0	63.0
MW350	0445_MW350_S_221014	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	1.37	1.89	17.9	1.93	19.3	-	<0.02	0.4	0.99	3.51	0.62	1.74	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.80	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	37.2	46.6	50.5
MW350	0445_MW350_S_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	2.80	4.12	53.3	4.94	45.5	-	<0.02	0.9	2.53	8.28	1.55	5.2	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	1.91	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	98.8	122	131
MW350	0445_MW350_S_231025	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	2.64	4.52	71.4	5.47	69.1	-	<0.02	1.0	2.58	9.98	1.54	5.64	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	2.38	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	140	166	176
MW350	0445_MW350_D_211111	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	0.04	0.03	0.27	0.02	0.33	-	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.6	0.72	0.77

T1: OMP Groundwater Analytical Summary Table (2021-2023)

Location Code	Field ID	Aquifer	Location	Date	Sample Event	Lab Report Number	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
							Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
							µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR							0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.02	0.05	0.02	0.05	0.05	0.02	0.05	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																		0.56																		0.07		
PFAS NEMP 2020 Freshwater 95%											0.13							220																				
PFAS NEMP 2020 Freshwater 99%											0.00023							19																				
PFAS NEMP 2020 Recreational Water																		10																		2		
MW350	0445_MW350_D_220503	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	0.10	0.04	0.25	0.02	0.28	-	<0.02	<0.1	<0.02	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.53	0.69	0.75
MW350	0445_MW350_D_221014	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.10	0.04	0.30	0.02	0.32	-	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.62	0.80	0.86
MW350	0445_MW350_D_230505	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.04	0.04	0.29	0.03	0.44	-	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	0.86	0.93
MW350	0445_MW350_D_231025	Shepparton and Coonambigdal Fluvium - Deep Aquifer	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	0.07	0.03	0.30	0.02	0.43	-	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	0.88	0.93
MW351	0445_MW351_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW351	0445_MW351_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW351	0445_QC100_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW351	0445_QC200_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	886780	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.1
MW351	0445_MW351_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
MW351	0445_MW351_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.02	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.05
MW351	0445_QC107_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
MW351	0445_QC207_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	987797	<0.01	<0.01	0.02	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.05	<0.1
MW351	0445_MW351_231025	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
MW352	0445_MW352_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	<0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	0.01
MW352	0445_MW352_220503	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	<0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	0.01
MW352	0445_MW352_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW352	0445_MW352_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW352	0445_MW352_231025	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	<0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	0.01
MW353	0445_MW353_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	12 Nov 2021	E1 - Nov 2021	EM2122518	0.46	0.43	3.20	0.26	3.85	-	<0.02	<0.1	0.13	0.53	0.11	0.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.05	8.50	9.19
MW353	0445_MW353_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	0.40	0.40	2.83	0.21	3.1	-	<0.02	<0.1	0.11	0.37	0.09	0.18	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.93	7.08	7.69
MW353	0445_MW353_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	0.30	0.34	2.40	0.16	2.54	-	<0.02	<0.1	0.06	0.35	0.06	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.94	5.85	6.35
MW353	0445_MW353_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	1.34	1.50	6.78	0.35	3.28	-	<0.02	0.2	0.34	1.56	0.25	0.33	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	10.1	14.1	15.9
MW353	0445_MW353_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	2.97	2.43	14.2	0.81	4.6	-	<0.02	0.2	0.89	2.42	0.56	0.67	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	18.8	26.5	29.8
MW354	0445_MW354_211116	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.04	0.03	0.23	<0.02	0.15	-	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.38	0.47	0.50
MW354	0445_MW354_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	0.03	<0.02	0.10	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.24	0.24
MW354	0445_MW354_221013	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.07	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	0.15
MW354	0445_MW354_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.06	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.14	0.14
MW354	0445_MW354_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.03	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	0.08
MW354	0445_QC109_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.04	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	0.09
MW354	0445_QC209_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	1039507	<0.01	<0.01	0.02	<0.01	0.04	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.06	<0.1
MW356	0445_MW356_211112	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	12 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW356	0445_MW356_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	05 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	0.02	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
MW356	0445_MW356_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	05 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW356	0445_MW356_231025	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW357	0445_MW357_211112	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	12 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	0.04	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	0.07
MW357	0445_MW357_220506	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	0.03	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
MW357	0445_MW357_221012	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.04	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	0.06
MW357	0445_MW357_230504	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.04	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	0.08
MW357	0445_MW357_231024	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	Off-base	24 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.03	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.05
MW359	0445_MW359_231128	Shepparton Colluvium - Shallow Aquifer	South Bandiana	28 Nov 2023	E5 - Oct 2023	EM2321318	<0.02	<0.02	0.15	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.26	0.26	0.26
MW360	0445_MW360_211111	Shepparton Colluvium - Shallow Aquifer	Off-base	11 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	0.09	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	0.15
MW360	0445_MW360_220506	Shepparton Colluvium - Shallow Aquifer	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	0.06	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	0.11
MW360	0445_MW360_221015	Shepparton Colluvium - Shallow Aquifer	Off-base	15 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.09	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.17	0.17
MW360	0445_MW360_230504	Shepparton Colluvium - Shallow Aquifer	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.06	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.14	0.14
MW360	0445_MW360_231025	Shepparton Colluvium - Shallow Aquifer	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.05	<0.02	0.07	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	0.12
MW361	0445_MW361_211111	Shepparton Colluvium - Shallow Aquifer	Off-base	11 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	0.13	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.22	0.22
MW361	0445_MW361_220506	Shepparton Colluvium - Shallow Aquifer	Off-base	06 May 2022	E2 - May 2022	EM2208381	0.02	<0.02	0.14	<0.02	0.07	-	<0.02	<0.10	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.24	0.24
MW361	0445_MW361_221015	Shepparton Colluvium - Shallow Aquifer	Off-base	15 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.03	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	0.11
MW361	0445_MW361_230504	Shepparton Colluvium - Shallow Aquifer	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.04	<0.02	0.1	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.14	0.14
MW361	0445_MW361_231025	Shepparton Colluvium - Shallow Aquifer	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.07	<0.02	0.1	-	<0.02	<0.1	<0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.22	0.22
MW403	0445_MW403_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	12 Nov 2021	E1 - Nov 2021	EM2122518	5.04	5.46	41.6	3.48	52.3	-	<0.04	1.1	2.23	9.86	1.69	4.41	0.05	<0.04	<0.04	<0.04	<0.04	<0.10	<0.05	1.41	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	93.9	120	129
MW403	0445_MW403_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	5.98	7.17	46.0	4.26	52.7	-	<0.04	1.3	2.40	11.2	1.66	3.42	0.06	<0.04	<0.04	<0.04	<0.04	<0.09	<0.05	0.95	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	98.7	126	137
MW403	0445_MW403_221014	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	4.15	3.95	29.2	2.90	58.1	-	<0.03	0.8	1.59	7.21	1.01	2.85	0.04	<0.03	<0.03	<0.03	<0.03	<0.08	<0.05	0.50	0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	87.3	105	112
MW403	0445_MW403_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	6.47	7.04	42.4	2.42	38.1	-	<0.02	1.4	2.80	10.3	1.80	3.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.53	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	80.5	107	116
MW403	0445_MW403_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	7.80	10.2	62.2	2.73	40.8	-	<0.02	1.8	3.34	14.4	2.04	3.55	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.68	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	103	137	150
MW404	0445_MW404_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	5.20	3.16	30.9	2.81	50.2	-	<0.04	0.8	1.66	7.59	1.73	3.86	<0.04	<0.04	<0.04	<0.04	<0.04	<0.10	<0.05	0.06	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	81.1	102	108
MW404	0445_QC103_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	EM2122518	5.33	2.88	28.4	2.75	40.9	-	<0.04	1.1	1.74	7.32	1.86	3.96	<0.04	<0.04	<0.04	<0.04	<0.04	<0.11	<0.05	0.06	<0.05	<0.05	<0.04	<0.11	<0.04	<0.11	<0.11	<0.04	<0.11	69.3	90.7	96.3
MW404	QC203_211111	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	11 Nov 2021	E1 - Nov 2021	841785	4.7	4.6	37	1.7	47	<0.1	<0.01	0.96	1.4	6.9	1.6	3.4	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.08	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	84	103.04	110.86
MW404	0445_MW404_220505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	05 May 2022	E2 - May 2022	EM2208381	7.16	9.16	45.2	4.18	56.2	-	<0.04	1.2	2.63	13.3	2.80	4.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.05	<0.05	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	101	132	146
MW404	0445_MW404_221014	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	12.8	13.0	74.0	4.68	82.4	-	<0.03	1.6	4.15	19.6	4.22	6.44	0.04	<0.03	<0.03	<0.03	<0.03	<0.08	<0.05	0.07	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	156	205	223
MW404	0445_MW404_230505	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	06 May 2023	E4 - May 2023	EM2308015	19.5	18.2	102	6.71	96.4	-	<0.03	2.6	6.13	31.2	7.04	12.2	0.05	<0.03	<0.03	<0.03	<0.03	<0.09	<0.05	0.12	<0.05	<0.05	<0.03	<0.09	<0.03	<0.09	<0.09	<0.03	<0.09	198	277	302
MW404	0445_MW404_231026	Shepparton and Coonambigdal Fluvium - Shallow Aquifer	East Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	13.9	16.8	110	6.86	104	-	<0.02	2.6	5.10	25.1	5.41	10.3	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.10	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	214	276	300
MW416	0445_MW416_230506	Shepparton Colluvium - Shallow Aquifer	East Bandiana	06 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW416	0445_MW416_231025	Shepparton Colluvium - Shallow Aquifer	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW416	0445_QC105_231025	Shepparton Colluvium - Shallow Aquifer	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
MW416	0445_QC205_231025	Shepparton Colluvium - Shallow Aquifer	East Bandiana	25 Oct 2023	E5 - Oct 2023	1039507	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.1
OTH019	0445_OTH019_211115	*Unknown*	Off-base	15 Nov 2021	E1 - Nov 2021	EM2122969	<0.02	<0.02	0.13	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.18	0.18
OTH019	0445_OTH019_220505	*Unknown*	Off-base	05 May 2022	E2 - May 2022	EM2208348	<0.02	<0.02	0.11	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	0.15
OTH019	0445_OTH019_221110	*Unknown*	Off-base	10 Nov 2022	E3 - Oct 2022	EM2222364	<0.02	<0.02	0.10	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	0.13
OTH019	0445_QC110_221110	*Unknown*	Off-base	10 Nov 2022	E3 - Oct 2022	EM2222364	<0.02	<0.02	0.10	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	0.13
OTH019	0445_QC210_221110	*Unknown*	Off-base	10 Nov 2022	E3 - Oct 2022	941104	<0.01	<0.01	0.10	<0.01	0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	0.15	0.15
OTH019	0445_OTH019_230502	*Unknown*	Off-base	02 May 2023	E4 - May 2023	EM2308003	<0.02	<0.02	0.11	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.16	0.16
OTH019	0445_OTH019_231023	*Unknown*	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319355	<0.02	<0.02	0.16	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.22	0.22

Environmental Standards

HEPA, January 2020, PFAS NEMP 2020 Drinking Water

HEPA, January 2020, PFAS NEMP 2020 Freshwater 95%

HEPA, January 2020, PFAS NEMP 2020 Freshwater 99%

HEPA, January 2020, PFAS NEMP 2020 Recreational Water

T2: OMP Surface Water Analytical Summary Table (2021-2023)

Location Code	Field ID	Location	Date	Sample Event	Lab Report Number	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
						PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.02	0.05	0.02	0.05	0.05	0.02	0.05	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.56																		0.07		
PFAS NEMP 2020 Freshwater 95%										0.13							220																				
PFAS NEMP 2020 Freshwater 99%										0.00023							19																				
PFAS NEMP 2020 Recreational Water																	10																		2		
SW307	0445_SW307_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.1	<0.02	0.07	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.17	0.17
SW307	0445_SW307_221013	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.11	<0.02	0.14	-	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.27	0.27
SW310	0445_SW310_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.21	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.32	0.32	0.32
SW310	0445_SW310_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	0.04	0.03	0.28	<0.02	0.18	-	<0.02	<0.1	<0.02	0.05	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.46	0.55	0.58
SW310	0445_SW310_230503	South Bandiana	03 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.03	<0.02	0.09	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	0.12
SW311	0445_SW311_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.03	0.02	0.41	0.03	1.75	-	<0.02	<0.1	0.04	0.06	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.16	2.32	2.37
SW311	0445_QC100_20221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	0.05	0.04	0.92	0.03	0.97	-	<0.02	0.2	0.24	0.29	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.89	2.78	2.85
SW311	0445_QC200_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	932350	0.07	0.06	1.2	0.04	1.2	<0.01	<0.01	0.23	0.34	0.36	0.06	0.1	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.4	3.56	3.71
SW311	0445_SW311_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	0.04	0.04	0.82	0.03	0.74	-	<0.02	<0.1	0.22	0.26	0.05	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.56	2.2	2.27
SW311	0445_SW311_230506	South Bandiana	06 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.02	<0.02	0.18	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.2	0.20
SW313	0445_QC111_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.10	0.07	1.28	0.06	3.85	-	<0.02	0.1	0.33	0.48	0.11	0.3	0.19	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.13	6.55	6.87
SW313	0445_QC211_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	842787	0.08	0.08	1.6	0.08	4.5	0.02	<0.01	0.23	0.32	0.53	0.12	0.35	0.18	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6.1	7.73	8.14
SW313	0445_SW313_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.10	0.06	1.3	0.07	3.13	-	<0.02	0.1	0.31	0.44	0.11	0.3	0.18	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.43	5.79	6.10
SW313	0445_SW313_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	0.10	0.08	1.06	0.04	2.91	-	<0.02	0.1	0.37	0.44	0.05	0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.97	5.13	5.33
SW313	0445_SW313_230501	South Bandiana	01 May 2023	E4 - May 2023	EM2308015	0.14	0.12	1.43	0.03	1.9	-	<0.02	0.1	0.41	0.59	0.1	0.14	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.33	4.81	5.04
SW313	0445_SW313_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	0.21	0.17	2.39	0.07	3.14	-	<0.02	0.3	0.79	1.1	0.14	0.19	0.11	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.53	8.26	8.61
SW316	0445_SW316_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.04	0.03	0.5	0.02	0.52	-	<0.02	<0.1	0.04	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.02	1.19	1.24
SW316	0445_SW316_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	0.03	0.02	0.46	0.03	0.91	-	<0.02	<0.1	0.04	0.08	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.37	1.55	1.60
SW316	0445_QC103_230503	South Bandiana	03 May 2023	E4 - May 2023	EM2308015	0.02	<0.02	0.08	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.21	0.21
SW316	0445_QC203_230503	South Bandiana	03 May 2023	E4 - May 2023	987797	0.02	<0.01	0.07	<0.01	0.14	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.23	0.23
SW316	0445_SW316_230503	South Bandiana	03 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.07	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.18	0.18
SW321	0445_QC112_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.18	0.17	2.36	0.10	3.88	-	<0.02	<0.1	0.05	0.36	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.24	6.94	7.21
SW321	0445_QC212_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	842787	0.18	0.26	2.8	0.13	7.5	<0.01	<0.01	0.06	0.06	0.45	0.04	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.3	11.2	11.64
SW321	0445_SW321_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.16	0.16	2.32	0.10	3.48	-	<0.02	<0.1	0.06	0.35	0.03	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.8	6.49	6.75
SW321	0445_SW321_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	0.05	0.05	0.96	0.10	6.13	-	<0.02	<0.1	0.02	0.11	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.09	7.32	7.47
SW321	0445_SW321_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.16	<0.02	0.96	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.12	1.12	1.12
SW321	0445_QC100_230501	South Bandiana	01 May 2023	E4 - May 2023	EM2308015	0.04	0.05	0.69	0.05	4.28	-	<0.02	<0.1	<0.02	0.08	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.97	5.12	5.22
SW321	0445_QC200_230501	South Bandiana	01 May 2023	E4 - May 2023	987797	0.04	0.04	0.62	0.07	4.7	<0.01	<0.01	<0.05	<0.01	0.07	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.32	5.46	5.58
SW321	0445_SW321_230501	South Bandiana	01 May 2023	E4 - May 2023	EM2308015	0.04	0.05	0.7	0.05	3.97	-	<0.02	<0.1	<0.02	0.08	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.67	4.82	4.92
SW321	0445_SW321_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	0.03	<0.02	0.41	0.03	3.1	-	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.51	3.61	3.64
SW322	0445_SW322_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.16	0.16	2.1	0.08	2.38	-	<0.02	<0.1	0.05	0.31	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.48	5.1	5.34
SW322	0445_SW322_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	0.04	0.06	1.04	0.11	6.97	-	<0.02	<0.1	0.02	0.12	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.01	8.25	8.42
SW322	0445_SW322_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.17	<0.02	0.83	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1	1	1.00
SW322	0445_SW322_230504	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	0.04	0.04	0.68	0.04	3.13	-	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.81	3.93	4.01
SW322	0445_SW322_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	0.02	0.02	0.37	<0.02	3	-	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.37	3.46	3.48
SW323	0445_SW323_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.02	<0.02	0.28	<0.02	0.66	-	<0.02	<0.1	0.04	0.06	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.94	1.09	1.09
SW323	0445_SW323_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	0.03	<0.02	0.2	<0.02	0.65	-	<0.02	<0.1	0.03	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.85	0.97	0.97
SW323	0445_SW323_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	0.04	<0.02	0.23	<0.02	0.56	-	<0.02	<0.1	0.03	0.05	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.79	0.94	0.94
SW323	0445_SW323_230504	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	0.03	0.02	0.23	<0.02	0.63	-	<0.02	<0.1	0.03	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.86	1	1.02
SW323	0445_QC103_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.26	<0.02	1.08	-	<0.02	<0.1	0.04	0.07	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.34	1.51	1.51
SW323	0445_QC203_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	1039507	0.02	0.02	0.23	0.01	0.88	<0.01	<0.01	<0.05	0.03	0.05	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.11	1.26	1.29
SW323	0445_SW323_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	0.02	0.27	<0.02	1.02	-	<0.02	<0.1	0.04	0.06	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.29	1.44	1.46
SW324	0445_QC110_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.06	0.04	0.62	0.03	1.61	-	<0.02	<0.1	0.1	0.15	0.04	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.23	2.66	2.73
SW324	0445_QC210_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	842787	0.05	0.06	1	0.05	2.6	0.02	0.01	0.1	0.11	0.21	0.05	0.11	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.6	4.23	4.43
SW324	0445_SW324_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.06	0.05	0.75	0.04	1.86	-	<0.02	<0.1	0.1	0.17	0.05	0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.61	3.09	3.20
SW324	0445_SW324_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.24	<0.02	0.96	-	<0.02	<0.1	0.04	0.04	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.2	1.33	1.33
SW324	0445_SW324_221010	South Bandiana	10 Oct 2022	E3 - Oct 2022	EM2220286	0.04	0.03	0.5	0.04	1.46	-	<0.02	<0.1	0.06	0.11	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.96	2.26	2.33
SW324	0445_QC101_230501	South Bandiana	01 May 2023	E4 - May 2023	EM2308015	0.07	0.05	0.64	0.02	1.8	-	<0.02	<0.1	0.12	0.18	0.05	0.09	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.44	2.95	3.04
SW324	0445_QC201_230501	South Bandiana	01 May 2023	E4 - May 2023	987797	0.05	0.05	0.71	0.03	2.1	<0.01	<0.01	0.06	0.11	0.16	0.05	0.08	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.81	3.32	3.44
SW324	0445_SW324_230501	South Bandiana	01 May 2023	E4 - May 2023	EM2308015	0.07	0.06	0.66	0.03	1.8	-	<0.02	<0.1	0.12	0.18	0.06	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.46	2.98	3.07
SW324	0445_SW324_231026	South Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	0.04	<0.02	0.3	0.02	2.04	-	<0.02	<0.1	0.07	0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.34	2.64	2.66
SW326	0445_SW326_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.22	0.19	2.14	0.22	7.99	-	0.07	0.2	0.37	0.63	0.19	0.38	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.49	0.11	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	10.1	12.7	13.2
SW326	0445_SW326_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.09	<0.02	0.6	-	<0.02	<0.1	0.04	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.69	0.76	0.76
SW326	0445_SW326_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.17	<0.02	0.48	-	<0.02	<0.1	0.02	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.65	0.73	0.73
SW326	0445_SW326_230501	South Bandiana	01 May 2023	E4 - May 2023	EM2308015	0.02	<0.02	0.17	<0.02	1.2	-	<0.02	<0.1	0.04	0.06	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.37	1.55	1.55
SW326	0445_QC102_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	0.04	0.04	0.63	0.06	2.68	-	<0.02	<0.1	0.11	0.18	0.06	0.12	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.31	3.9	4.03
SW326	0445_QC202_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	1039507	0.04	0.04	0.59	0.06	2.8	0.02	<0.01	0.06	0.11	0.14	0.05	0.1	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.39	3.96	4.13
SW326	0445_SW326_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	0.05	0.04	0.59	0.06	2.62	-	<0.02	<0.1	0.1	0.17	0.06	0.11	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.07	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.21	3.77	3.90
SW332	0445_SW332_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
SW332	0445_SW332_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.06	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.1	0.10
SW332	0445_SW332_230503	South Bandiana	03 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	<0.01	<0.02	0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	0.01
SW332	0445_QC100_231128	South Bandiana	28 Nov 2023	E5 - Oct 2023	EM2321318	0.27	0.12	0.74	0.04	3.22	-	<0.02	0.2	0.16	0.34	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.96	5	5.16
SW332	0445_QC200_231128	South Bandiana	28 Nov 2023	E5 - Oct 2023	1049115	0.23	0.09	0.66	0.04	3.3	0.02	<0.01	0.19	0.14	0.27	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.96	4.85	5.14
SW332	0445_SW332_231128	South Bandiana	28 Nov 2023	E5 - Oct 2023	EM2321318	0.28	0.12	0.78	0.05	3.52	-	<0.02	0.2	0.16	0.33	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.3	5.35	5.52
SW333	0445_SW333_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.07	0.05	0.4	<0.02	0.44	-	<0.02	<0.1	0.07	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.84	1.14	1.19
SW333	0445_SW333_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.02	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	0.13
SW333	0445_SW333_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.03	<0.02	0.17	<0.02	0.41	-	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.67	0.67
SW333	0445_SW333_230503	South Bandiana	03 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.04	<0.02	0.12	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.16	0.16
SW333	0445_SW333_231128	South Bandiana	28 Nov 2023	E5 - Oct 2023	EM2321318	0.05	<0.02	0.17	<0.02	0.52	-	<0.02	<0.1	0.03	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.69	0.85	0.85
SW336	0445_SW336_211115	South Bandiana	15 Nov 2021	E1 - Nov 2021	EM2122998	0.06	0.05	0.42	0.05	7.29	-	0.19	<0.1	0.1	0.26	0.1	0.2	0.15	0.16	0.1	0.02	<0.02	<0.05	<0.05	0.35	0.83	0.14	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.71	9.61	10.5

T2: OMP Surface Water Analytical Summary Table (2021-2023)

						PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.02	0.05	0.02	0.05	0.05	0.02	0.05	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.56																		0.07		
PFAS NEMP 2020 Freshwater 95%										0.13							220																				
PFAS NEMP 2020 Freshwater 99%										0.00023							19																				
PFAS NEMP 2020 Recreational Water																	10																		2		
Location Code	Field ID	Location	Date	Sample Event	Lab Report Number																																
SW336	0445_SW336_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	0.14	0.11	0.54	0.04	7.64	-	0.96	<0.2	0.44	0.95	0.25	0.35	0.16	0.14	0.23	0.24	0.08	<0.09	<0.05	0.9	1.44	1.19	0.11	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	8.18	12.6	15.9
SW336	0445_QC106_20221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.05	0.05	0.51	0.08	4.7	-	0.07	<0.1	0.09	0.21	0.08	0.17	0.06	0.07	0.03	<0.02	<0.02	<0.05	<0.05	0.25	0.47	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.21	6.53	6.93
SW336	0445_QC206_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	932350	0.07	0.07	0.8	0.15	6.8	0.13	0.08	0.06	0.14	0.3	0.11	0.25	0.07	0.09	0.03	<0.01	<0.01	<0.01	<0.01	0.33	0.58	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.6	9.44	10.12
SW336	0445_SW336_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.05	0.07	0.65	0.10	5.98	-	0.09	<0.1	0.1	0.23	0.08	0.19	0.06	0.08	0.04	<0.02	<0.02	<0.05	<0.05	0.27	0.53	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.63	8.08	8.57
SW336	0445_SW336_230504	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	0.10	0.19	1.15	0.07	4.78	-	0.1	0.2	0.35	0.93	0.31	0.57	0.21	0.11	0.05	0.02	<0.02	<0.05	<0.05	1.28	0.77	0.16	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.93	10.4	11.4
SW336	0445_SW336_231027	South Bandiana	27 Oct 2023	E5 - Oct 2023	EM2319356	0.22	0.23	2.08	0.20	13.8	-	0.44	0.3	0.71	1.77	0.55	1.17	0.42	0.28	0.13	0.07	<0.02	<0.05	<0.05	1.09	0.96	0.32	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	15.9	22.6	24.8
SW338	0445_SW338_211109	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	0.09	0.03	0.25	<0.02	1.06	-	<0.02	<0.1	0.04	0.16	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.31	1.67	1.70
SW338	0445_SW338_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	0.03	0.03	0.24	<0.02	0.76	-	<0.02	<0.1	0.04	0.11	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1	1.22	1.25
SW338	0445_QC107_20221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.03	0.02	0.17	<0.02	0.62	-	<0.02	<0.1	0.02	0.09	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.79	0.96	0.98
SW338	0445_QC207_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	932350	0.03	0.03	0.22	0.01	0.81	<0.01	<0.01	<0.05	0.04	0.12	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.03	1.28	1.33
SW338	0445_SW338_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.03	0.02	0.17	<0.02	0.53	-	<0.02	<0.1	0.03	0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.7	0.89	0.91
SW338	0445_QC102_230502	South Bandiana	02 May 2023	E4 - May 2023	EM2308015	0.03	0.03	0.2	<0.02	0.55	-	<0.02	<0.1	0.03	0.11	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.75	0.95	0.98
SW338	0445_QC202_230502	South Bandiana	02 May 2023	E4 - May 2023	987797	0.03	0.03	0.19	0.01	0.72	<0.01	<0.01	<0.05	0.03	0.1	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.91	1.13	1.17
SW338	0445_SW338_230502	South Bandiana	02 May 2023	E4 - May 2023	EM2308015	0.03	0.02	0.18	<0.02	0.53	-	<0.02	<0.1	0.03	0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.71	0.9	0.92
SW338	0445_SW338_231025	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	0.04	0.03	0.22	<0.02	0.98	-	<0.02	<0.1	0.05	0.13	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.2	1.48	1.51
SW340	0445_SW340_211109	South Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	0.26	0.21	1.66	0.11	4.2	-	<0.02	0.2	0.28	0.44	0.1	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.86	7.29	7.61
SW340	0445_QC108_20221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.02	0.02	0.21	<0.02	0.7	-	<0.02	<0.1	0.03	0.06	0.03	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.91	1.1	1.14
SW340	0445_QC208_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	932350	0.03	0.03	0.29	0.02	1.3	<0.01	<0.01	<0.05	0.05	0.09	0.04	0.06	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	0.03	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.59	1.94	2.05
SW340	0445_SW340_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.02	0.02	0.22	<0.02	0.76	-	<0.02	<0.1	0.03	0.07	0.03	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.98	1.18	1.22
SW340	0445_SW340_230502	South Bandiana	02 May 2023	E4 - May 2023	EM2308015	<0.02	0.03	0.3	0.02	1.2	-	<0.02	<0.1	0.03	0.08	0.07	0.09	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.5	1.77	1.85
SW340	0445_SW340_231025	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	0.04	0.04	0.48	0.02	2.01	-	<0.02	<0.1	0.14	0.18	0.12	0.16	0.06	0.04	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.49	3.13	3.29
SW346	0445_SW346_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	0.04	0.03	0.21	<0.02	0.73	-	<0.02	<0.1	0.07	0.08	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.94	1.2	1.23
SW346	0445_SW346_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	0.04	<0.02	0.17	<0.02	0.69	-	<0.02	<0.1	0.04	0.05	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.86	1.05	1.05
SW346	0445_SW346_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.05	0.04	0.3	0.02	0.77	-	<0.02	<0.1	0.05	0.08	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.07	1.31	1.37
SW346	0445_SW346_230505	South Bandiana	05 May 2023	E4 - May 2023	EM2308015	0.03	0.02	0.16	<0.02	0.67	-	<0.02	<0.1	0.05	0.06	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.83	1.02	1.04
SW346	0445_SW346_231025	South Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	0.08	0.04	0.36	0.02	1.14	-	<0.02	<0.1	0.09	0.11	0.04	0.06	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.5	1.88	1.96
SW349	0445_QC206_211115	South Bandiana	15 Nov 2021	E1 - Nov 2021	842787	0.04	0.03	0.22	0.01	0.84	<0.01	<0.01	0.08	0.07	0.1	0.03	0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.06	1.43	1.51
SW349	0445_QC106_211115	South Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.05	0.02	0.18	<0.02	0.55	-	<0.02	<0.1	0.06	0.08	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	0.98	1.00
SW349	0445_SW349_211115	South Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.04	0.03	0.21	<0.02	0.61	-	<0.02	<0.1	0.06	0.08	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.82	1.06	1.09
SW349	0445_QC103_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	0.02	<0.02	0.15	<0.02	0.46	-	<0.02	<0.1	0.04	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.61	0.73	0.73
SW349	0445_QC203_220504	South Bandiana	04 May 2022	E2 - May 2022	886780	0.03	0.02	0.13	<0.01	0.54	<0.01	<0.01	<0.05	0.04	0.04	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.67	0.83	0.87
SW349	0445_SW349_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	0.03	<0.02	0.13	<0.02	0.48	-	<0.02	<0.1	0.04	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.61	0.74	0.74
SW349	0445_SW349_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	0.03	0.02	0.16	<0.02	0.47	-	<0.02	<0.1	0.04	0.05	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.63	0.78	0.80
SW349	0445_SW349_230502	South Bandiana	02 May 2023	E4 - May 2023	EM2308015	0.03	<0.02	0.13	<0.02	0.46	-	<0.02	<0.1	0.03	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.59	0.71	0.71
SW349	0445_QC100_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	0.04	0.02	0.21	<0.02	0.64	-	<0.02	<0.1	0.06	0.08	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.85	1.1	1.12
SW349	0445_QC200_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	1039507	0.03	0.02	0.16	<0.01	0.63	<0.01	<0.01	<0.05	0.04	0.06	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.79	0.97	1
SW349	0445_SW349_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	0.03	0.03	0.19	<0.02	0.67	-	<0.02	<0.1	0.05	0.08	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.86	1.09	1.12
SW355	0445_QC107_211117	South Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.08	<0.02	0.21	-	<0.02	<0.1	0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.36	0.36
SW355	0445_QC207_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	842787	0.02	0.01	0.1	<0.01	0.29	<0.01	<0.01	<0.05	0.03	0.04	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.39	0.51	0.52
SW355	0445_SW355_211117	South Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.08	<0.02	0.22	-	<0.02	<0.1	0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.36	0.36
SW355	0445_QC104_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.05	<0.02	0.19	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.25	0.25
SW355	0445_QC104_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208382	<0.02	<0.02	0.05	<0.02	0.19	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.25	0.25
SW355	0445_QC204_220504	South Bandiana	04 May 2022	E2 - May 2022	886780	0.01	<0.01	0.05	<0.01	0.27	<0.01	<0.01	<0.05	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.32	0.37	0.37
SW355	0445_QC204_220504	South Bandiana	04 May 2022	E2 - May 2022	898569	0.01	<0.01	0.05	<0.01	0.27	<0.01	<0.01	<0.05	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.32	0.37	0.37
SW355	0445_SW355_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.02	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	0.13
SW355	0445_SW355_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.07	<0.02	0.21	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.28	0.28	0.28
SW355	0445_SW355_230504	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.04	<0.02	0.13	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.17	0.17
SW355	0445_QC101_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.06	<0.02	0.22	-	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.28	0.3	0.30
SW355	0445_QC201_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	1039507	0.01	<0.01	0.05	<0.01	0.16	<0.01	<0.01	<0.05	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.26	0.26
SW355	0445_SW355_231023	South Bandiana	23 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.06	<0.02	0.21	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.27	0.28	0.28
SW370	0445_SW370_211117	North Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.08	<0.02	0.22	-	<0.02	<0.1	<0.02	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.33	0.33
SW370	0445_SW370_220506	North Bandiana	06 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.03	<0.02	0.1	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	0.13
SW370	0445_QC109_20221015	North Bandiana	15 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.06	<0.02	0.14	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.2	0.20
SW370	0445_QC209_221015	North Bandiana	15 Oct 2022	E3 - Oct 2022	932350	<0.01	<0.01	0.08	<0.01	0.19	<0.01	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.27	0.29	0.29
SW370	0445_SW370_221015	North Bandiana	15 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.06	<0.02	0.14	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.2	0.20
SW370	0445_SW370_230504	North Bandiana	04 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.03	<0.02	0.09	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	0.12
SW370	0445_SW370_231026	North Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.05	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.16	0.16
SW374	0445_SW374_211117	North Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.04	<0.02	0.13	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.17	0.17
SW374	0445_SW374_220506	North Bandiana	06 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.02	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	0.07
SW374	0445_SW374_221014	North Bandiana	15 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.04	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	0.12
SW374	0445_SW374_230505	North Bandiana	05 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.02	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.1	0.10
SW374	0445_SW374_231026	North Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.04	<0.02	0.09	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	0.13
SW375	0445_SW375_211117	North Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	0.06	<0.02	0.09	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	0.15
SW375	0445_SW375_220506	North Bandiana	06 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.02	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	0.08
SW375	0445_SW375_221012	North Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.03	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	0.08
SW375	0445_SW375_230505	North Bandiana	05 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.02	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	0.07
SW375	0445_SW375_231026	North Bandiana	26 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	0.03	<0.02	0.09	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	0.12
SW379	0445_SW379_21116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122998	0.15	0.04	0.17	<0.02	0.41	-	0.02	0.1	0.07	0.09	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	1.01	1.07
SW379	0445_SW379_221014	Off-base	14 Oct 2022	E3 - Oct 2022	EM2220286	0.03	<0.02	0.03	<0.02	0.12	-	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.2	0.20
SW380	0445_SW380_211108	East Bandiana	10 Nov 2021	E1 - Nov 2021	EM2122518	0.06	0.02	0.09	<0.02	0.34	-	<0.02	<0.1	<0.02	0.08	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.57	0.59

T2: OMP Surface Water Analytical Summary Table (2021-2023)

						PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.02	0.05	0.02	0.05	0.05	0.02	0.05	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.56																		0.07		
PFAS NEMP 2020 Freshwater 95%										0.13							220																				
PFAS NEMP 2020 Freshwater 99%										0.00023							19																				
PFAS NEMP 2020 Recreational Water																	10																		2		
Location Code	Field ID	Location	Date	Sample Event	Lab Report Number																																
SW380	0445_SW380_221014	East Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.02	<0.02	0.18	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.2	0.20
SW380	0445_SW380_230506	East Bandiana	06 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	0.01	<0.02	0.1	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	0.11
SW382	0445_QC109_211116	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW382	0445_QC209_211116	East Bandiana	16 Nov 2021	E1 - Nov 2021	842787	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.1
SW382	0445_SW382_211116	East Bandiana	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW382	0445_SW382_220503	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW382	0445_SW382_221013	East Bandiana	13 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW382	0445_SW382_230505	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW382	0445_QC104_231025	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW382	0445_QC204_231025	East Bandiana	25 Oct 2023	E5 - Oct 2023	1039507	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.1
SW382	0445_SW382_231025	East Bandiana	25 Oct 2023	E5 - Oct 2023	EM2319356	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW387	0445_SW387_211116	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.03	<0.02	0.15	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.24	0.24
SW387	0445_QC101_220503	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.08	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	0.12
SW387	0445_QC201_220503	East Bandiana	03 May 2022	E2 - May 2022	886780	0.01	<0.01	0.06	<0.01	0.04	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.11	0.11
SW387	0445_SW387_220503	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	<0.02	<0.02	0.05	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.1	0.10
SW387	0445_SW387_221012	East Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.13	<0.02	0.13	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.26	0.26	0.26
SW387	0445_SW387_230508	East Bandiana	08 May 2023	E4 - May 2023	EM2308015	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW387	0445_SW387_231027	East Bandiana	27 Oct 2023	E5 - Oct 2023	EM2319356	0.04	<0.02	0.15	<0.02	0.14	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.33	0.33
SW388	0445_SW388_211116	East Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.04	<0.02	0.2	<0.02	0.28	-	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.48	0.54	0.54
SW388	0445_SW388_221210	East Bandiana	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.05	<0.02	0.07	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	0.12
SW390	0445_SW390_211109	Off-base	09 Nov 2021	E1 - Nov 2021	EM2122518	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW390	0445_SW390_220505	Off-base	05 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW390	0445_SW390_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW390	0445_SW390_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW390	0445_SW390_231027	Off-base	27 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW393	0445_SW393_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW393	0445_SW393_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW393	0445_SW393_221110	Off-base	10 Nov 2022	E3 - Oct 2022	EM2222367	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW393	0445_SW393_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW393	0445_SW393_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW395	0445_SW395_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	0.03	<0.02	0.1	<0.02	0.09	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.22	0.22
SW395	0445_SW395_220509	Off-base	09 May 2022	E2 - May 2022	EM2208629	<0.02	<0.02	0.06	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.1	0.10
SW395	0445_SW395_230506	Off-base	06 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.03	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	0.06
SW395	0445_SW395_231027	Off-base	27 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.05	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.1	0.10
SW395	0445_SW395_221110	Off-base	10 Nov 2022	E3 - Oct 2022	EM2222367	0.03	0.02	0.2	<0.02	0.18	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.38	0.41	0.43
SW396	0445_SW396_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122968	0.16	0.11	1.07	0.03	0.44	-	<0.02	<0.1	0.04	0.13	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.51	1.88	2.02
SW396	0445_SW396_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	0.21	0.19	1.65	0.05	0.57	-	<0.02	<0.1	0.06	0.17	0.04	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.22	2.75	2.99
SW396	0445_SW396_ 230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	0.14	0.18	1.14	0.05	0.49	-	<0.02	<0.1	0.04	0.17	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.63	2.04	2.27
SW396	0445_SW396_231027	Off-base	27 Oct 2023	E5 - Oct 2023	EM2319357	0.17	0.14	1.3	0.04	0.67	-	<0.02	<0.1	0.06	0.17	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.97	2.45	2.63
SW396	0445_SW396_221012	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220270	0.09	0.08	0.68	0.02	0.42	-	<0.02	<0.1	0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.1	1.3	1.40
SW397	0445_SW397_221012	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220270	0.50	0.51	3.3	0.24	3.23	-	<0.02	<0.1	0.18	0.75	0.14	0.24	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.53	8.34	9.09
SW397	0445_SW397_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122968	0.57	0.51	3.32	0.26	3.32	-	<0.02	0.2	0.23	0.72	0.19	0.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.64	8.85	9.62
SW397	0445_SW397_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	0.64	0.68	4.32	0.30	3.99	-	<0.02	0.1	0.27	0.87	0.2	0.34	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.31	10.7	11.7
SW397	0445_SW397_ 230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	0.58	0.62	3.41	0.24	2.79	-	<0.02	0.1	0.2	0.87	0.16	0.28	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.2	8.39	9.25
SW397	0445_SW397_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319357	0.52	0.54	3.7	0.24	3.09	-	<0.02	<0.1	0.21	0.84	0.16	0.26	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.79	8.78	9.56
SW398	0445_SW398_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW398	0445_SW398_220503	Off-base	03 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW398	0445_SW398_221012	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.04	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	0.08
SW398	0445_SW398_230506	Off-base	06 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW398	0445_SW398_231027	Off-base	27 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW400	0445_SW400_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122968	0.26	0.13	0.81	0.06	0.7	-	<0.02	<0.1	0.05	0.14	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.51	2.06	2.25
SW400	0445_SW400_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	0.07	0.05	0.33	<0.02	0.22	-	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.55	0.7	0.75
SW400	0445_SW400_ 230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	0.02	0.03	0.18	<0.02	0.14	-	<0.02	<0.1	<0.02	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.32	0.37	0.40
SW400	0445_SW400_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319357	0.17	0.14	1	0.05	0.57	-	<0.02	<0.1	0.06	0.2	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.57	2.1	2.29
SW400	0445_SW400_221012	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220270	0.06	0.05	0.32	0.02	0.25	-	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.57	0.7	0.77
SW401	0445_SW401_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122968	0.15	0.08	0.53	0.03	0.32	-	<0.02	<0.1	0.03	0.11	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.85	1.2	1.31
SW401	0445_SW401_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	0.07	0.06	0.33	<0.02	0.18	-	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.51	0.66	0.72
SW401	0445_SW401_221012	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220270	0.05	0.02	0.16	<0.02	0.1	-	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.26	0.34	0.36
SW401	0445_SW401_ 230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	0.05	0.05	0.22	<0.02	0.11	-	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.33	0.43	0.48
SW401	0445_SW401_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319357	0.13	0.10	0.68	0.03	0.4	-	<0.02	<0.1	0.04	0.13	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.08	1.45	1.58
SW403	0445_SW403_211112	Off-base	12 Nov 2021	E1 - Nov 2021	EM2122519	0.09	0.07	0.33	<0.02	0.26	-	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.59	0.77	0.84
SW403	0445_SW403_220505	Off-base	05 May 2022	E2 - May 2022	EM2208383	0.11	0.08	0.38	<0.02	0.2	-	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.76	0.84
SW403	0445_SW403_221015	Off-base	15 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
SW403	0445_SW403_230505	Off-base	05 May 2023	E4 - May 2023	EM2308009	0.02	<0.02	0.13	<0.02	0.12	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.27	0.27
SW403	0445_SW403_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319354	0.12	0.12	0.58	0.03	0.37	-	<0.02	<0.1	0.03	0.14	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.95	1.3	1.45
SW404	0445_SW404_211112	Off-base	12 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW404	0445_SW404_211117	Off-base	17 Nov 2021	E1 - Nov 2021	EM2122998	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW404	0445_SW404_220505	Off-base	05 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW404	0445_SW404_221015	Off-base	15 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW404	0445_SW404_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01

T2: OMP Surface Water Analytical Summary Table (2021-2023)

						PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
Location Code	Field ID	Location	Date	Sample Event	Lab Report Number	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.02	0.05	0.02	0.05	0.05	0.02	0.05	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.56																		0.07		
PFAS NEMP 2020 Freshwater 95%										0.13							220																				
PFAS NEMP 2020 Freshwater 99%										0.00023							19																				
PFAS NEMP 2020 Recreational Water																	10																		2		
Location Code	Field ID	Location	Date	Sample Event	Lab Report Number																																
SW404	0445_SW404_231023	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW405	0445_SW405_211112	Off-base	12 Nov 2021	E1 - Nov 2021	EM2122519	0.08	0.07	0.35	<0.02	0.16	-	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.51	0.67	0.74
SW405	0445_SW405_220505	Off-base	05 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	0.05	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	0.13
SW405	0445_SW405_221015	Off-base	15 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
SW405	0445_SW405_230506	Off-base	06 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.06	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	0.11
SW405	0445_SW405_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319354	0.08	0.07	0.4	<0.02	0.26	-	<0.02	<0.1	<0.02	0.09	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.66	0.86	0.93
SW409	0445_SW409_211112	Off-base	12 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
SW409	0445_SW409_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	0.01	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.05
SW409	0445_SW409_221015	Off-base	15 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.03	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	0.09
SW409	0445_SW409_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
SW409	0445_SW409_231023	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.03	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	0.09
SW412	0445_SW412_211112	Off-base	12 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	0.01	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.05
SW412	0445_SW412_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	0.07	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	0.11
SW412	0445_SW412_221015	Off-base	15 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	0.03
SW412	0445_SW412_230505	Off-base	05 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
SW412	0445_SW412_231026	Off-base	26 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.01	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.04
SW416	0445_SW416_211111	Off-base	12 Nov 2021	E1 - Nov 2021	EM2122519	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW416	0445_SW416_220505	Off-base	05 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW416	0445_SW416_221012	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW416	0445_SW416_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW416	0445_SW416_231024	Off-base	24 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW424	0445_QC208_211115	Off-base	15 Nov 2021	E1 - Nov 2021	842787	0.03	0.05	0.73	0.03	1.1	<0.01	<0.01	0.06	0.04	0.1	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.83	2.12	2.22
SW424	0445_QC108_211115	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122998	0.04	0.03	0.52	0.02	0.74	-	<0.02	<0.1	0.03	0.09	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.26	1.45	1.50
SW424	0445_SW424_211115	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	0.04	0.02	0.4	0.02	0.76	-	<0.02	<0.1	0.03	0.06	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.16	1.32	1.36
SW424	0445_SW424_220504	Off-base	04 May 2022	E2 - May 2022	EM2208383	0.03	0.04	0.48	0.03	0.8	-	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.28	1.38	1.45
SW424	0445_SW424_230502	Off-base	02 May 2023	E4 - May 2023	EM2308009	0.03	0.03	0.46	<0.02	0.84	-	<0.02	<0.1	0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.3	1.43	1.46
SW424	0445_SW424_231023	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319354	0.04	0.03	0.56	0.03	1.14	-	<0.02	<0.1	0.04	0.09	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.7	1.91	1.97
SW424	0445_SW424_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	0.02	<0.02	0.19	<0.02	0.78	-	<0.02	<0.1	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.97	1.03	1.03
SW427	0445_SW427_211115	Off-base	15 Nov 2021	E1 - Nov 2021	EM2122999	<0.02	<0.02	0.06	<0.02	0.19	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.25	0.25
SW427	0445_SW427_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	0.03
SW427	0445_SW427_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.14	<0.02	0.37	-	<0.02	<0.1	<0.02	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.51	0.54	0.54
SW427	0445_SW427_231023	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.03	<0.02	0.11	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.14	0.14
SW427	0445_SW427_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.13	<0.02	0.4	-	<0.02	<0.1	<0.02	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.53	0.56	0.56
SW430	0445_SW430_211115	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	<0.02	<0.02	0.06	<0.02	0.1	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.16	0.16
SW430	0445_SW430_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW430	0445_SW430_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.04	<0.02	0.13	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.17	0.17
SW430	0445_SW430_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.06	<0.02	0.13	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.19	0.19
SW430	0445_SW430_231023	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.02	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	0.08
SW431	0445_SW431_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	<0.02	<0.02	0.03	<0.02	0.07	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.1	0.10
SW431	0445_SW431_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
SW431	0445_SW431_230502	Off-base	02 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	0.03
SW431	0445_SW431_231023	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.01	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.05
SW431	0445_SW431_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.05	<0.02	0.14	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.19	0.19
SW432	0445_SW432_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	<0.02	<0.02	0.03	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	0.08
SW432	0445_SW432_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
SW432	0445_SW432_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.03	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	0.09
SW432	0445_SW432_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.02	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	0.06
SW432	0445_SW432_231023	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	0.02	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	0.08
SW434	0445_SW434_211115	Off-base	15 Nov 2021	E1 - Nov 2021	EM2122999	<0.02	<0.02	0.02	<0.02	0.05	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	0.07
SW434	0445_SW434_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	<0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02
SW434	0445_SW434_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW434	0445_SW434_230502	Off-base	02 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	<0.01	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	0.03
SW434	0445_SW434_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01
SW448	0445_SW448_211115	South Bandiana	16 Nov 2021	E1 - Nov 2021	EM2122998	0.06	0.05	1.14	0.04	2.09	-	<0.02	<0.1	0.12	0.25	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.23	3.76	3.85
SW448	0445_SW448_221014	South Bandiana	14 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	0.12	<0.02	0.31	-	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.46	0.46
SW448	0445_QC104_230503	South Bandiana	03 May 2023	E4 - May 2023	EM2308015	0.04	0.03	0.6	0.02	1.28	-	<0.02	<0.1	0.04	0.09	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.88	2.08	2.13
SW448	0445_QC204_230503	South Bandiana	03 May 2023	E4 - May 2023	987797	0.03	0.03	0.57	0.02	1.5	<0.01	<0.01	<0.05	0.04	0.08	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.07	2.27	2.34
SW448	0445_SW448_230503	South Bandiana	03 May 2023	E4 - May 2023	EM2308015	0.04	0.03	0.58	<0.02	1.23	-	<0.02	<0.1	0.04	0.09	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.81	2.01	2.04
SW462	0445_SW462_211111	Off-base	11 Nov 2021	E1 - Nov 2021	EM2122518	0.03	0.02	0.11	<0.02	0.08	-	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.24	0.26
SW462	0445_QC105_220505	Off-base	05 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	0.01	<0.02	0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	0.03
SW462	0445_QC205_220505	Off-base	05 May 2022	E2 - May 2022	886780	<0.01	<0.01	0.02	<0.01	0.04	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.06	<0.1
SW462	0445_SW462_220505	Off-base	05 May 2022	E2 - May 2022	EM2208383	<0.02	<0.02	0.02	<0.02	0.03	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.05
SW462	0445_SW462_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	<0.02	<0.02	0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	0.01
SW462	0445_SW462_230504	Off-base	04 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.01	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.05
SW462	0445_SW462_231024	Off-base	24 Oct 2023	E5 - Oct 2023	EM2319354	0.05	0.05	0.26	<0.02	0.16	-	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.42	0.55	0.60
SW463	0445_SW463_211115	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	0.05	0.03	0.74	0.04	1.36	-	<0.02	<0.1	0.02	0.07	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.1	2.28	2.35
SW463	0445_SW463_220504	Off-base	04 May 2022	E2 - May 2022	EM2208383	0.04	0.02	0.42	0.02	0.99	-	<0.02	<0.1	0.03	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.41	1.52	1.56
SW463	0445_QC101_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	0.03	0.03	0.49	0.02	1	-	<0.02	<0.1	0.06	0.1	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.49	1.75	1.80
SW463	0445_QC201_221011	Off-base	11 Oct 2022	E3 - Oct 2022	932350	0.04	0.03	0.65	0.04	1.7	<0.01	<0.01	0.07	0.09	0.14	0.03	0.06	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.35	2.78	2.88
SW463	0445_SW463_230502	Off-base	02 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	0.07	<0.02	0.3	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.37	0.37

T2: OMP Surface Water Analytical Summary Table (2021-2023)

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.02	0.05	0.02	0.05	0.05	0.02	0.05	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water												0.56																		0.07		
PFAS NEMP 2020 Freshwater 95%					0.13							220																				
PFAS NEMP 2020 Freshwater 99%					0.00023							19																				
PFAS NEMP 2020 Recreational Water												10																		2		
Location Code	**Field ID**	**Location**	**Date**	**Sample Event**	**Lab Report Number**																													
SW463	0445_SW463_231023	Off-base	23 Oct 2023	E5 - Oct 2023	EM2319354	**0.02**	**0.02**	**0.45**	<0.02	**0.9**	-	<0.02	<0.1	**0.02**	**0.06**	<0.02	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.35**	**1.48**	**1.50**
SW463	0445_SW463_221011	Off-base	11 Oct 2022	E3 - Oct 2022	EM2220271	**0.03**	**0.03**	**0.49**	**0.02**	**1.02**	-	<0.02	<0.1	**0.06**	**0.1**	<0.02	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.51**	**1.75**	**1.80**
SW470	0445_SW470_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122999	**0.02**	<0.02	**0.07**	<0.02	**0.06**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.13**	**0.15**	**0.15**
SW470	0445_SW470_220503	Off-base	03 May 2022	E2 - May 2022	EM2208383	**0.03**	**0.03**	**0.23**	<0.02	**0.19**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.42**	**0.45**	**0.48**
SW470	0445_SW470_221012	Off-base	22 Oct 2022	E3 - Oct 2022	EM2220286	<0.02	<0.02	**0.04**	<0.02	**0.04**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.08**	**0.08**	**0.08**
SW470	0445_SW470_230506	Off-base	06 May 2023	E4 - May 2023	EM2308009	<0.02	<0.02	**0.10**	<0.02	**0.11**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.21**	**0.21**	**0.21**
SW470	0445_SW470_231027	Off-base	27 Oct 2023	E5 - Oct 2023	EM2319354	<0.02	<0.02	**0.11**	<0.02	**0.08**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.19**	**0.19**	**0.19**
SW471	0445_SW471_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122968	**0.23**	**0.15**	**1.01**	**0.07**	**0.81**	-	<0.02	<0.1	**0.06**	**0.17**	**0.04**	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.82**	**2.38**	**2.60**
SW471	0445_SW471_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	**0.45**	**0.40**	**2.30**	**0.12**	**1.14**	-	<0.02	<0.1	**0.14**	**0.46**	**0.12**	**0.15**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.44**	**4.76**	**5.28**
SW471	0445_SW471_ 230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	**0.08**	**0.09**	**0.48**	**0.02**	**0.32**	-	<0.02	<0.1	<0.02	**0.08**	<0.02	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.8**	**0.99**	**1.10**
SW471	0445_SW471_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319357	**0.25**	**0.19**	**1.38**	**0.08**	**0.96**	-	<0.02	<0.1	**0.07**	**0.28**	**0.05**	**0.08**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.34**	**3.07**	**3.34**
SW471	0445_SW471_221012	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220270	**0.12**	**0.11**	**0.76**	**0.04**	**0.64**	-	<0.02	<0.1	**0.04**	**0.12**	**0.02**	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.4**	**1.74**	**1.89**
SW487	0445_SW487_221012	Off-base	12 Oct 2022	E3 - Oct 2022	EM2220270	**0.48**	**0.48**	**3.12**	**0.26**	**4.09**	-	<0.02	<0.1	**0.15**	**0.61**	**0.13**	**0.22**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**7.21**	**8.80**	**9.54**
SW487	0445_SW487_211116	Off-base	16 Nov 2021	E1 - Nov 2021	EM2122968	**0.60**	**0.57**	**3.37**	**0.27**	**3.45**	-	<0.02	**0.2**	**0.21**	**0.69**	**0.18**	**0.30**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.82**	**9.00**	**9.84**
SW487	0445_SW487_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	**0.64**	**0.61**	**3.58**	**0.29**	**4.13**	-	<0.02	**0.1**	**0.25**	**0.86**	**0.19**	**0.32**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**7.71**	**10.1**	**11.0**
SW487	0445_SW487_ 230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	**0.57**	**0.61**	**3.32**	**0.25**	**2.84**	-	<0.02	**0.1**	**0.20**	**0.85**	**0.16**	**0.28**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.16**	**8.32**	**9.18**
SW487	0445_SW487_231025	Off-base	25 Oct 2023	E5 - Oct 2023	EM2319357	**0.47**	**0.51**	**3.48**	**0.24**	**2.90**	-	<0.02	<0.1	**0.21**	**0.82**	**0.15**	**0.26**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.38**	**8.29**	**9.04**

Environmental Standards

HEPA, January 2020, PFAS NEMP 2020 Drinking Water
HEPA, January 2020, PFAS NEMP 2020 Freshwater 95%
HEPA, January 2020, PFAS NEMP 2020 Freshwater 99%
HEPA, January 2020, PFAS NEMP 2020 Recreational Water

T3: OMP Sediment Analytical Summary Table (2021-2023)

						Sample Preparation	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
						Moisture Content	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
						%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR						0.1	0.0002	0.0002	0.0002	0.0002	0.0002	0.005	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002
Location Code	**Field ID**	**Location**	**Date**	**Sample Event**	**Lab Report Number**																																
SD323	0445_QC109_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	**45.9**	<0.0002	<0.0002	**0.0006**	<0.0002	**0.0152**	-	**0.0004**	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0002**	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0158**	**0.0158**	**0.0171**
SD323	0445_QC209_220504	South Bandiana	04 May 2022	E2 - May 2022	886780	**44**	<0.005	<0.005	<0.005	<0.005	**0.016**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.016**	**0.016**	<0.05
SD323	0445_SD323_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	**43.8**	<0.0002	<0.0002	**0.0006**	<0.0002	**0.0167**	-	**0.0004**	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002	**0.0004**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0173**	**0.0173**	**0.0184**
SD323	0445_SD323_230504	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	**28.0**	<0.0002	<0.0002	**0.0008**	<0.0002	**0.0129**	-	**0.0003**	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0137**	**0.0137**	**0.0140**
SD346	0445_SD346_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	**24.2**	<0.0002	<0.0002	**0.0002**	<0.0002	**0.0039**	-	**0.0002**	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0041**	**0.0041**	**0.0043**
SD346	0445_SD346_230505	South Bandiana	05 May 2023	E4 - May 2023	EM2308015	**29.2**	<0.0002	<0.0002	**0.0005**	<0.0002	**0.0109**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0114**	**0.0114**	**0.0114**
SD355	0445_SD355_220504	South Bandiana	04 May 2022	E2 - May 2022	EM2208381	**21.8**	<0.0002	<0.0002	<0.0002	<0.0002	**0.0010**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0010**	**0.0010**	**0.0010**
SD355	0445_SD355_230504	South Bandiana	04 May 2023	E4 - May 2023	EM2308015	**28.4**	<0.0002	<0.0002	<0.0002	<0.0002	**0.0011**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0011**	**0.0011**	**0.0011**
SD375	0445_QC110_230505	North Bandiana	05 May 2023	E4 - May 2023	EM2308015	**27.7**	<0.0002	<0.0002	<0.0002	<0.0002	**0.0021**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0021**	**0.0021**	**0.0021**
SD375	0445_QC210_230505	North Bandiana	05 May 2023	E4 - May 2023	987797	**31**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.05	<0.05	<0.05
SD375	0445_SD375_220506	North Bandiana	06 May 2022	E2 - May 2022	EM2208381	**6.7**	<0.0002	<0.0002	**0.0002**	<0.0002	**0.0042**	-	**0.0005**	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0044**	**0.0044**	**0.0049**
SD375	0445_SD375_230505	North Bandiana	05 May 2023	E4 - May 2023	EM2308015	**29.7**	<0.0002	<0.0002	<0.0002	<0.0002	**0.0032**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0032**	**0.0032**	**0.0032**
SD382	0445_QC108_230505	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	**21.8**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD382	0445_QC208_230505	East Bandiana	05 May 2023	E4 - May 2023	987797	**22**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.05	<0.05	<0.05
SD382	0445_SD382_220503	East Bandiana	03 May 2022	E2 - May 2022	EM2208381	**30.9**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD382	0445_SD382_230505	East Bandiana	05 May 2023	E4 - May 2023	EM2308015	**22.7**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD395	0445_SD395_230506	Off-base	06 May 2023	E4 - May 2023	EM2308009	**32.0**	<0.0002	<0.0002	<0.0002	<0.0002	**0.0020**	-	**0.0002**	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0020**	**0.0020**	**0.0022**
SD396	0445_SD396_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	**6.3**	**0.0008**	**0.0014**	**0.0193**	**0.0009**	**0.0180**	-	<0.0002	<0.001	<0.0002	**0.0009**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0373**	**0.0390**	**0.0413**
SD396	0445_SD396_230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	**5.8**	**0.0003**	**0.0004**	**0.0061**	**0.0004**	**0.0162**	-	<0.0002	<0.001	<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0223**	**0.0229**	**0.0237**
SD397	0445_SD397_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	**44.1**	**0.0008**	**0.0021**	**0.0246**	**0.0016**	**0.0196**	-	<0.0002	<0.001	<0.0002	**0.0008**	**0.0002**	**0.0004**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0442**	**0.0464**	**0.0501**
SD397	0445_SD397_230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	**43.8**	**0.0007**	**0.0016**	**0.0195**	**0.0041**	**0.0666**	-	<0.0002	<0.001	**0.0003**	**0.0027**	**0.0007**	**0.0021**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0861**	**0.0926**	**0.0983**
SD400	0445_SD400_220503	Off-base	03 May 2022	E2 - May 2022	EM2208382	**5.0**	<0.0002	<0.0002	**0.0010**	<0.0002	**0.0049**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0059**	**0.0059**	**0.0059**
SD400	0445_SD400_220503	Off-base	03 May 2022	E2 - May 2022	EM2208383	**5.0**	<0.0002	<0.0002	**0.0027**	**0.0002**	**0.0117**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0144**	**0.0144**	**0.0146**
SD400	0445_SD400_230506	Off-base	06 May 2023	E4 - May 2023	EM2308004	**5.3**	<0.0002	<0.0002	**0.0030**	<0.0002	**0.0163**	-	<0.0002	<0.001	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	**0.0004**	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0193**	**0.0195**	**0.0205**
SD412	0445_SD412_220506	Off-base	06 May 2022	E2 - May 2022	EM2208383	**34.8**	<0.0002	<0.0002	<0.0002	<0.0002	**0.0014**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0014**	**0.0014**	**0.0014**
SD412	0445_SD412_230508	Off-base	08 May 2023	E4 - May 2023	EM2308009	**49.4**	<0.0002	<0.0002	<0.0002	<0.0002	**0.0020**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0020**	**0.0020**	**0.0020**
SD424	0445_SD424_220504	Off-base	04 May 2022	E2 - May 2022	EM2208383	**20.2**	<0.0002	<0.0002	**0.0003**	<0.0002	**0.0038**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0041**	**0.0041**	**0.0041**
SD424	0445_SD424_230502	Off-base	02 May 2023	E4 - May 2023	EM2308009	**22.7**	<0.0002	<0.0002	**0.0002**	<0.0002	**0.0033**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0035**	**0.0035**	**0.0035**
SD463	0445_QC110_220504	Off-base	04 May 2022	E2 - May 2022	EM2208383	**23.2**	<0.0002	<0.0002	**0.0005**	<0.0002	**0.0086**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0091**	**0.0091**	**0.0091**
SD463	0445_QC210_220504	Off-base	04 May 2022	E2 - May 2022	886780	**25**	<0.005	<0.005	<0.005	<0.005	**0.013**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.013**	**0.013**	<0.05
SD463	0445_SD463_220504	Off-base	04 May 2022	E2 - May 2022	EM2208383	**21.1**	<0.0002	<0.0002	**0.0003**	<0.0002	**0.0085**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0088**	**0.0088**	**0.0088**
SD463	0445_SD463_230502	Off-base	02 May 2023	E4 - May 2023	EM2308009	**36.1**	<0.0002	<0.0002	**0.0003**	<0.0002	**0.0048**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0051**	**0.0051**	**0.0051**

Appendix A Cardno SAQP (2024b)

©JBS&G Australia Pty Ltd

PFAS OMP Sampling and Analysis Quality Plan (SAQP)

Bandiana Military Area

DEF19008



Prepared for
Department of Defence

28 March 2024

Cardno

Contact Information

Cardno Victoria Pty Ltd
ABN 47 106 610 913

Level 4
501 Swanston Street
Melbourne VIC 3000
Australia

www.cardno.com
Phone +61 3 8415 7777
Fax +61 3 8415 7788

Author(s):

Document Information

Prepared for	Department of Defence
Project Name	Bandiana Military Area
File Reference	DEF19008_OMP002_Bandiana_SAQP_Rev6.docx
Job Reference	DEF19008
Date	28 March 2024
Version Number	6
Effective Date	28/03/2024

Approved By:

[redacted]

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Table of Contents

1	Introduction		5
	1.1	Scope & Objectives	5
	1.2	Previous Reports	5
	1.3	Responsible Parties	6
	1.4	Relevant Guidelines	6
	1.5	Standards of Assessment and Limitations	7
2	Site Setting		7
	2.1	Site Description	7
	2.2	Conceptual Site Model	13
3	Data Quality Objectives		15
4	Sampling Location Rationale and Methodology		17
	4.1	Monitoring Schedule	17
	4.2	Groundwater Monitoring	18
	4.3	Surface Water Monitoring	22
	4.4	Sediment Monitoring	25
	4.5	Quality Control Contingency Measures	26
	4.6	Data Management	27
5	Assessment Criteria		27
	5.1	Groundwater and Surface Water	27
	5.2	Sediment	27
6	Deviations from the OMP		28
7	Reporting		28
	7.1	Factual Reporting	28
	7.2	Interpretive Reporting	29
	7.3	Provision of Results to Private Property Owners	30
	7.4	SAQP Review	30
8	References		31

Appendices

Appendix A Figures

Appendix B Analytical suite

Appendix C Well Location Codes and Well Construction Details

Tables

Table 1-1	Responsible Parties	6
Table 2-1	Site Identification Details	8

Table 2-2	Current and Previous Surrounding Land Uses	9
Table 2-3	Key Site Details	11
Table 3-1	Data Quality Objectives	16
Table 3-2	Data Quality Indicators	17
Table 4-1	Monitoring Intervals	18
Table 4-2	BMA Groundwater Monitoring Network	19
Table 4-3	Groundwater Monitoring Wells – Sampling Method	20
Table 4-4	OMP Surface Water Monitoring Locations and Frequency	22
Table 4-5	Surface Water Monitoring Methodology	24
Table 4-6	OMP Sediment Monitoring Locations and Frequency	25
Table 4-7	Sediment Monitoring Methodology	26
Table 5-1	PFAS Criteria for Groundwater and Surface Water	27
Table 6-1	OMP Deviations	28

1 Introduction

Cardno, now Stantec (Cardno), have been engaged by the Australian Department of Defence ('Defence') to prepare a Sampling and Analysis Quality Plan (SAQP) as part of the Ongoing Monitoring Plan (OMP), the purpose of which is to monitor trends in the extent and concentrations of per- and poly-fluoroalkyl substances (PFAS) identified on and around Bandiana Military Area (BMA) (the "Site"), Victoria.

The OMP SAQP applies to BMA and surrounding areas that make up the "Management Area", outlined in Figure 1, Appendix A and defined in Section 2.1.1.

The Site is located on Commonwealth Land and is regulated under Commonwealth environmental legislation.

The OMP outlines the rationale and scope for monitoring the concentrations and extent of PFAS in groundwater, surface water and sediment originating from the Site for an initial 2-year monitoring period (initial implementation period). The initial implementation period consists of biannual and annual sampling events. Findings from the monitoring over the 2-year initial implementation period will be used to assess any changes to the nature and extent of PFAS impact within the environment, where there is an identified potentially elevated risk to a receptor, or a potential future risk to a receptor.

1.1 Scope & Objectives

The objective of the SAQP is to present the specific monitoring locations, sampling methodologies and quality assurance / quality control (QA/QC) measures for the monitoring of the concentrations and extent of PFAS in groundwater, surface water and sediment at and around the Site under the OMP. These findings will inform risk management decisions by Defence and the Victorian Government to protect human health and the environment.

The objectives of the ongoing monitoring program as set out in the OMP are to:

- Implement a program of surface water, groundwater and sediment monitoring to continue to assess changes in risk from PFAS within the environment, focusing on where there is an identified potential risk requiring management under the PFAS Management Area Plan (PMAP); and
- Assess the seasonal effects of PFAS concentrations in surface water, groundwater and sediment, including, during or immediately following extreme or high rainfall events.

The scope of the monitoring specified in the OMP includes:

- Evaluating the nature and extent (spatial and temporal) of PFAS impacts in groundwater, surface water and sediment pathways associated with Site sources of PFAS derived from legacy AFFF;
- Monitoring the migration of PFAS in groundwater and surface water from the Site;
- Providing confirmation of the current understanding of risk; and
- Providing supporting data for assessment of management actions, where relevant.

These objectives fulfil the recommendations outlined in the PFAS Management Area Plan (PMAP) (Golder, 2020b) to provide supporting data to inform the ongoing management requirements for impacted media on- and Off-Site contributing to a potentially elevated risk to receptors.

1.2 Previous Reports

The following key reports prepared in relation to the BMA PFAS Investigation have been used as a basis to develop this SAQP:

- Golder (2018), PFAS Detailed Site Investigation (DSI), Bandiana Military Area, September 2018.
- Golder (2020a), Human Health and Ecological Risk Assessment (HHERA), Bandiana Military Area, November 2020.
- Golder (2020b), Bandiana Military Area, PFAS Management Area Plan (PMAP), November 2020.
- Golder (2020c), Bandiana Military Area, PFAS Ongoing Monitoring Plan, November 2020.

> GHD (2016), Defence per- and poly-fluoroalkyl Substances (PFAS), Environmental Management Preliminary Sampling Program, Albury Wodonga Military Area (Bandiana), September 2016.

1.3 Responsible Parties

Responsible parties and responsibilities associated with the implementation of the OMP are detailed in Table 1-1.

Table 1-1 Responsible Parties

Role	Responsibilities
Department of Defence – PFAS Investigation and Management Branch	▪ Implement this OMP. ▪ Engage suitably qualified environmental consultants/contractors to carry out the works specified in the OMP.
Bandiana Military Area – Base Manager and Environment and Sustainability Manager	▪ Review and approve all necessary permits required for implementation of the works outlined in the OMP.
Environmental Consultant	▪ Obtain necessary permits from BMA to implement the works outlined in the OMP. ▪ Liaise with local council or water authority to arrange sampling of Off-Site waterways, as required. ▪ Undertake the monitoring activities outlined in this SAQP. ▪ Produce a factual report that summarises the data and findings of each monitoring event and is consistent with the requirements of this SAQP. ▪ Produce an ongoing monitoring report (OMR) including recommendations for any potential changes in the location and frequency of sampling which may be incorporated in the revision of the OMP. ▪ Upload analytical data from each monitoring event to the relevant Defence ESdat database.
Department of Defence and Environmental Consultant (lead)	▪ Liaise with Off-Site private property owners/relevant authorities to arrange private property access to conduct sampling.
PMAP Lead Consultant	▪ Implement PMAP recommendations and undertake PMAP review. Undertakes OMP review.

1.4 Relevant Guidelines

This SAQP has been prepared in general accordance with the current 'industry standards' for a site investigation for the purpose, objectives and scope identified in this report. These standards are set out in:

> Australian Standard (2005), AS 4482.1-2005, Guide to the Investigation and Sampling of Sites With Potentially Contaminated Soils, Part 1 - Non-volatile and Semi-Volatile Compounds (withdrawn as pending revision, referred to for 'state of knowledge').

> Department of Defence (2019), Pollution Prevention Management Manual – Annex 1L: Pollution Prevention Guidance – Routine Water Quality Monitoring.

> Department of Defence (2021b), Contamination Management Manual (DCMM), Annex L – Data Management, August 2019, Amended June 2021.

> Department of Defence, Department of Energy (2018), Quality System Manual Schedule B15 USEPA DQO Process.

> Environment Protection Authority (EPA) Victoria (2022), Groundwater Sampling Guidelines, Publication 669.1, February 2022.

> EPA Victoria (2009), Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 701, June 2009.

> EPA Victoria (2020), Interim Position Statement on PFAS, Publication 1669.4, October 2020.

> Heads of Environmental Protection Authority's Australia and New Zealand (HEPA) (2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020.

- National Environment Protection Council (NEPC) (2013), National Environmental Protection (Assessment of Site Contamination) Measure (1999, as amended 2013) (ASC NEPM).
- National Health and Medical Research Council (NHMRC) (2019), Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water, August 2019.
- United States Environment Protection Authority (USEPA) (2006), Guidance for the Data Quality Objectives Process (EPA QA/G-4).
- USEPA (2002), Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8).

1.5 Standards of Assessment and Limitations

This SAQP has been prepared in general accordance with the current industry standards for an assessment of this type for the purpose, objectives and scope identified in this report.

The scope presented in this SAQP report are derived only from available desk-based information and site inspection undertaken. This SAQP is not any of the following:

- An Environmental Audit Report as defined under the Environment Protection Act 2017.
- A Geotechnical Assessment.
- A Detailed Site Investigation.
- A Detailed Hydrogeological Assessment.
- A Remediation Action Plan (RAP) report.
- A Site Management Plan (SMP).

2 Site Setting

2.1 Site Description

BMA is located approximately 250km north-east of Melbourne, adjacent to the New South Wales (NSW) – Victoria border town of Wodonga, Victoria and covers an area of 650 hectares (ha). The Site is situated approximately 3km from Wodonga town centre. The BMA comprises the following bases:

- Gaza Ridge Barracks (comprising and referred to in this report as North Bandiana and South Bandiana); and
- Wadsworth Barracks (comprising and referred to in this report as East Bandiana).

BMA is used by Defence for administration, accommodation, training and warehousing / logistics. Other operations related to storage and maintenance of vehicles also occur at the Site.

The other infrastructure and supporting services on each portion of the BMA include the following:

South Bandiana

- Several residential areas for Defence personnel.
- Victorian State Government Primary School (Bandiana Primary School).
- Sheep grazing along the base of Bears Hill.
- Base Fire Services (former training ground).
- Petroleum facilities.

North Bandiana

- Several residential areas for Defence personnel.
- Community facility (Bandiana Neighbourhood House), which is registered child care provider, kinder and playground.
- Sheep grazing to the south-east of the unnamed creek.
- Warehouses for storage of equipment.

East Bandiana

- Current Fire Station.
- Football field.

2.1.1 Management Area Description

The OMP includes sampling and analysis not only from the Site, but also from Off-Site locations situated on public and private land. The Site and these surrounding areas which collectively encompass the network of OMP monitoring locations, are referred to as the "Management Area".

The "On-Site Monitoring Area" is defined as BMA and is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

The "Off-Site Monitoring Area" is defined as comprising Jack in the Box Creek to the north-west of South Bandiana to its confluence with Wodonga Creek, an unnamed creek to the east of North Bandiana to its confluence with the Kiewa River, and the Kiewa River and western Kiewa River floodplain from Middle Creek in the south to north of the unnamed creek.

"The Management Area" is defined as comprising the On-Site Monitoring Area and the Off-Site Monitoring Area.

2.1.2 Site Definition and Planning

For the purposes of this SAQP report, "the Site" is defined as comprising BMA. A detailed description of the Site is provided in the PMAP (Golder, 2020b). The site location is presented on Figure 1, Appendix A.

Key Site identification details are presented in Table 2-1.

Table 2-1 Site Identification Details

Details	Description
Site Address	Bandiana Military Area, VIC, 3694
Land Description	Bandiana Military Area
Owner	Department of Defence
Title Details[1]	North Bandiana: • Lot 2 PS437772 South Bandiana: • Lot 1 TP849698 • Lot 2 TP849698 • Lot 2 PS420756 • Lot 3 PS420756 East Bandiana: • Lot 1 PS400773 • Lot 1 TP849660
Planning Zone / Land use	Commonwealth Land (CA)
Local Government Authority (LGA)	City of Wodonga
1- Source: VicPlan: https://mapshare.vic.gov.au/vicplan/	

2.1.3 Surrounding Land Uses and Zoning

The adjacent land surrounding the Site is a mix of:

- General Residential (GRZ1).
- Public Park and Recreation (PPRZ).
- Rural Conservation Zone (RCZ).
- Industrial Zone (IZ1) and,

> Public Conservation and Resource Zone (PCRZ).

The immediate surrounding land uses are outlined in Table 2-2.

Table 2-2 Current and Previous Surrounding Land Uses

Area	Direction	Historic Land Use (Golder, 2018)	Current Land Use (Golder, 2020c)
North Bandiana	**North**	Historical aerial imagery shows the Huon Hill area as vacant land.	Huon Hill, which is currently used for grazing and as a recreation space (walking and picnicking).
	West	Aerial imagery shows the land largely undeveloped with only one residential property visible from 1969-2003.	A residential development is located to the west (low density residential development) followed by the town of Wodonga.
	East	Aerial imagery shows the land largely undeveloped followed by the Kiewa River, floodplain and unnamed creek.	A residential development is located to the east (low density residential area) followed by the Kiewa River floodplain and Kiewa River. The unnamed creek flows east through the residential development.
	South	Aerial imagery shows South Bandiana to the south-west, the Wodonga stockyards and vacant land followed by Upper Middle Creek directly south.	South Bandiana is located to the south across Anzac parade and the Murray valley Highway. An industrial facility and the former Wodonga stockyards are located south of the northern portion of North Bandiana. Upper Middle Creek is located beyond the industrial facility and the former stockyards.
East Bandiana	**North**	Residential properties are located to the north as early as 1969, with the Kiewa River further north.	A residential development is located to the north, with the Kiewa River further to the north.
	West	Undeveloped land is located west across Whytes Road in aerials from 1969-1975. Historical aerials from 1987 onwards show the Wodonga Stockyard.	The former Wodonga Stockyard is located to the west across Whytes Road.
	East	Residential properties are located to the north-east as early as 1969, as well as the Kiewa River floodplain. The Kiewa River travels south to north, east of East Bandiana.	The residential suburb of Killara is located to the east, as well as pastoral grazing lands within the Kiewa River floodplain. The Kiewa River is located to the east, and continues to the north.
	South	Middle Creek flows west to east along the southern boundary in aerial imagery from as early as 1969.	Middle Creek flows in a west to east direction along the southern boundary of the Site, with Baranduda Water Treatment Plant located beyond Middle Creek.
South Bandiana	**North**	Aerial imagery shows Anzac Parade followed by residential properties and Huon Hill.	North Bandiana and a residential development are located to the north across Anzac Parade. A small area of commercial properties are also located to the north.
	West	Aerial imagery shows the land largely undeveloped from 1969-2003. Jack in the Box Creek flows to the north-western boundary towards Wodonga Creek	Residential development is located to the west, with the Jack Perry Reserve (recreational reserve) adjacent to the north-west boundary of BMA. Jack in the Box Creek flows to the north-western boundary towards Wodonga Creek.
	East	Aerial imagery shows the land largely undeveloped. Middle Creek flows south to east across the Kiewa Highway.	An industrial facility is located to the east, across the Kiewa Valley Highway, with rural grazing properties located to the south across Tooles Road.
	South	Historical aerial imagery shows the area south of South Bandiana as vacant land.	A rural grazing property is located adjacent to the southern boundary. A mix of rural grazing properties and new residential

Area	Direction	Historic Land Use (Golder, 2018)	Current Land Use (Golder, 2020c)
			developments are further south beyond Bears Hill.

2.1.4 Environmental Setting

Key details defining the site are summarised in Table 2-3. See Figure 1, Appendix A for key features.

Table 2-3 Key Site Details

Setting	Description
Climate	Climate indicators have been recorded at nearby Albury Airport Bureau station (072146) since 1983. Mean maximum temperatures range from 13.0°C in July to 31.9°C in January. Mean annual rainfall at this station since 1983 is 713.2mm, with rain falling more from June through October. The minimum mean monthly rainfall occurs in February with 43.0 mm, and the maximum in July with 77.7 mm. The prevailing wind direction in the morning (9am) is from the east while in the afternoon (3pm) the prevailing winds are from the south-east and, to a lesser extent, the west. The regional wind direction may be affected by the surrounding topographic features such as Bears Hill[1].
Topography	The Site is located in the Upper Murray landscape where low lying and relatively flat river and creeks floodplains are present. The dominant topographic features in the area comprise Huon Hill in the north-east and Bears Hill in the south-west, which rise 400m above the Australian Height Datum (mAHD) and 350 mAHD, respectively. The BMA is largely located in between the two hills at an elevation ranging from 180 mAHD and 200 mAHD. There is an approximate north to south topographic divide that runs through the BMA which divides the BMA into two catchments. West of the divide, the surface slopes to the north-west towards the Murray River and Wodonga Creek via Jack in the Box Creek. East of the divide, the surface slopes to the east and north-east towards the Kiewa River.
Geology	**Regional Geology:** As outlined in the DSI (Golder, 2018) and OMP (Golder, 2020c), the Site is underlain by three (3) main geological units, comprising: ▪ The Omeo-Metamorphic Complex (OMC) forms the basement rock for the investigation area. It has been formed by fine sediments and muds transported during the Ordovician period from an ancient continental zone. Tectonic activity created the intrusions of magmatic rock, mainly granite. Clays and muds formed schist, while the granite transformed into gneiss. The hills of the investigation area (Bears Hill (gneiss) and Huon Hill (schist) are the remnants of this period. ▪ The Shepparton Formation resulted from deposition and erosion of sand, silt and clay associated with the ancient Murray River system during the Tertiary period. Erosion caused by this ancient river system resulted in the carving of a deep paleovalley within the OCM. Further erosion of the hills resulted in the further accumulation of sediments at the base of the hills, which is called the Shepparton Colluvium. This unit is inferred to be mainly distributed along the central part of the investigation area between Bears Hill and Huon Hill. The Shepparton Fluvium, which is inferred to be mainly distributed in the north-west and south-east portions of the investigation area, is the result of the deposition of alluvial sediments from the ancient Murray River system within the paleovalley. ▪ The Coonambigdal Formation also resulted from river sediment deposition and erosion, which was formed during the Quaternary period. The Coonambigdal Colluvium resulted from the recent erosion of the hills, which is reflected along the foothills of Huon and Bears Hills. Coonambigdal Fluvium is the result of sediment deposition, distributed in the lower lying zones of the investigation area, along the existing creeks and rivers surrounding the BMA. **Site Specific Geology:** South Bandiana: The sub-surface conditions encountered across South Bandiana are generally consistent with the unconsolidated hill-wash deposit (Quaternary and Tertiary Shepparton Colluvium comprising sands, silts, clays and gravels) inferred by the Geological Map Sheet (1979). These are also encountered in the upper portion of Jack in the Box Creek. The Shepparton Colluvium was generally observed to comprise fine grained red brown sediments (clays and silts) with some interbedded sands and gravels. OMC basement rock, in the form of granite, was identified towards the base of Bears Hill in South Bandiana. The depth to basement rock generally decreased towards Bears Hill as did the thickness of the overlying Shepparton Colluvium and Coonambigdal Colluvium (Golder, 2018). North Bandiana: The 1:50,000 Albury Geological Map Sheet (1979) indicates that North Bandiana is situated across the Quaternary and Tertiary Shepparton Colluvium, and the younger Shepparton Fluvium.

Setting	Description
	The geological profiles across the northern and western portion generally comprised fine grained red brown sediments (clays and silts) with some interbedded sands representative of the Shepparton Colluvium. An increase in coarser grained brown, orange brown and grey brown soils (sands and gravels) were observed along the unnamed creek in the southern portion of North Bandiana. These soils are representative of the Shepparton Fluvium (Golder, 2018). East Bandiana: East Bandiana is comprised of various combinations of clays, silts and sands, which is reflective of the nature of the depositional environment. The upper 3-5 m of the profile tended to be dominated by brown sandy soils, underlain by brown clay soils. These soils are representative of the Shepparton Fluvium. The soil encountered along the Kiewa River were generally coarser, predominately comprising sands and gravels, and as such were considered representative of the Coonambigdal Fluvium (Golder, 2018).
Acid Sulphate Soil	A review of the Acid Sulphate Soils (ASS) risk mapping, available on the Soil Health online database[2], indicates that South Bandiana and the western part of North Bandiana are classified as having an extremely low probability of ASS occurrence, whereas East Bandiana is classified as low probability of ASS occurrence.
Hydrology	Several surface water bodies including Jack in the Box Creek, Middle Creek, an unnamed creek and the Kiewa River conform the two (2) catchments at the Site as follows: ▪ **Jack in the Box Creek Catchment (west of the topographic divide):** this catchment is located to the western portion of South Bandiana, which drains towards Wodonga Creek (3.5 km away from the Site) via Jack in the Box Creek. This catchment is classified as an intermittent surface watercourse, with some sections being constructed before reaching Wodonga Creek. This catchment is also fed by small gullies inferred to reflect ephemeral drainages originating from Bears Hill and shallow drainage channels that run across the western-most portion of the Site. The gullies and drainage channels are typically dry but were observed to have pools of surface water during and following periods of heavy rainfall (Golder, 2020b). ▪ **Middle Creek / Kiewa River Catchment (east of the topographic divide):** this catchment includes North Bandiana, East Bandiana and the eastern portion of South Bandiana, which drains towards the Kiewa River via an unnamed creek running north of Middle Creek and discharges to the Kiewa River approximately 2.1 km north of the confluence with Middle Creek (Golder, 2020b). The unnamed creek is an actively modified creek, portions of which have been concreted, which originates from a number of drainage channels and stormwater ponds (wetlands) in the eastern portion of South Bandiana. The Kiewa River originates in the Bogong High Plains and flows north to its confluence with the Murray River. The Kiewa River exhibits seasonal variation in flow, with the highest flows typically observed from August to October following snow melt in the high country (Golder, 2020b).
Hydrogeology	Previous environmental investigations (Golder, 2018) identified that the primary aquifer unit of the Site are Shepparton Fluvium and Colluvium, and with a minimal presence the Coonambigdal Fluvium. The deepest standing water level (SWL) is 35 m BGL (Shepparton formation) and the shallowest 3 m BGL (Coonambigdal formation). ▪ **Depth to Groundwater** – Groundwater occurring from within the Shepparton Colluvium has previously been recorded beneath the Site at levels of between 12 and 35 mBGL and groundwater occurring from the Fluvium formation was recorded at levels between 4m and 8 mBGL and the Coonambigdal is less than 3 mBGL. ▪ **Groundwater Flow Direction** – The flow of groundwater through the Site has two (2) pathways: toward the Wodonga Creek (north-west of the Site) and towards the Kiewa River (north-east of the Site). This divide occurs through central South Bandiana, which is consistent with the local topography. The larger area draining towards the Kiewa River and the difference in groundwater levels from the central portion of South Bandiana to East Bandiana indicates that the Kiewa River is considered likely to act as a regional groundwater discharge zone (Golder, 2020b). ▪ **Groundwater Use** – Regional groundwater use is known to be used for domestic and agricultural purposes (primarily for irrigation of dairy pasture and stock watering). A review of VVG (Visualising Victorian Groundwater) indicated 20 Off-Site registered groundwater bores within a 1km radius of the Site[3]. Bores were registered for the following purposes: – Unknown: four (4) bores (inferred use associated with the water treatment plant), which is located south of East Bandiana – Non-groundwater: four (4) bores

Setting	Description
	– Domestic / stock: eight (8) bores: six (6) are located downgradient to the north-west of South Bandiana, within the catchment area of Jack in the Box Creek and, two (2) are located upgradient to the south to south-west of Bears Hill. – Irrigation: 3 bores, located downgradient to the north-west of South Bandiana, within the Jack in the Box Creek catchment area. – Investigation: one (1) bore, which is located upgradient to the south to south-west of Bears Hill. – It is noted that in the experience of Cardno, groundwater may also be used by persons with unregistered bores not appearing on the database. ▪ **Surface Water and Drainage**: The BMA is located across two (2) catchment areas: Jack in the Box Creek (west of the topographic divide) and Middle Creek / Kiewa River (east of the topographic divide). – West of the topographic divide includes the western portion of the South Bandiana area, and drains towards Wodonga Creek via Jack in the Box Creek, which runs in a north north-westerly direction from the north-west portion of the BMA. Jack in the Box Creek is an intermittent surface watercourse, with sections being constructed before discharging to Wodonga Creek. Upstream, the Creek receives the discharge of gullies and shallow drainage channels that run across the western-most portion of the BMA. The gullies (generally dry) are inferred to reflect ephemeral drainages originating from Bears Hill that have been modified by human activity over time (Golder, 2020c). – East of the topographic divide includes the eastern portion of South Bandiana, North Bandiana and East Bandiana. This divide drains towards Kiewa River via the unnamed creek, which runs north of Middle Creek. The unnamed creek originates in the eastern portion of South Bandiana as a number of drainage channels. This subsequently discharges to a series of stormwater ponds (wetlands) located at the entry of South Bandiana. Some portions of this Creek have been concreted within North Bandiana. It is noted that its course is actively modified as a result of further residential development downstream North Bandiana (Golder, 2020c). In the area surrounding the Site, groundwater is expected to flow north-east and north-west towards the Kiewa River and Wodonga Creek respectively. Groundwater flow contours are shown on Figure 2, Appendix A as per previous SAQP (Golder, 2018).
Environmental Sensitive Areas	Several surface water bodies flow On-Site and Off-Site. According to the two (2) identified catchments at the Site, the Kiewa River located at 2.1 km north-east and the Wodonga Creek located at 3.5 km north-west are the primary environmentally sensitive areas that receive discharge from smaller creeks, such as Jack in the Box Creek and the unnamed creek.
Wetlands	The Site includes several open drainage channels that collect surface water runoff mainly from South Bandiana and North Bandiana. These drainage channels form part of the unnamed creek and discharge to a series of stormwater ponds that are considered wetlands.
Further information can be found in the DSI report (Golder, 2018) and the PMAP (Golder, 2020b). *1. Bureau of Meteorology, 072146, 1983 to 2022 (BoM, 2023) http://www.bom.gov.au accessed 25 March 2024* *2: Soil Health Knowledgebase: https://www.ccmaknowledgebase.vic.gov.au/soilhealth* *3. Visualising Victoria's Groundwater https://www.vvg.org.au/vvg_map.php?agreement=Agree+and+Continue#, last accessed in March 2023.* *4. Department of Economic Development, Jobs, Transport and Resources.*	

2.2 Conceptual Site Model

The Conceptual Site Model (CSM) for the Site is provided in Appendix C of the PMAP (Golder, 2022b) to identify major/minor sources, migration pathways, exposure routes and receptors (current and future).

The CSM was based on numerous PFAS investigations, including:

> Golder (2018), PFAS Detailed Site Investigation, Bandiana Military Area, September 2018.

> Golder (2020a), Human Health and Ecological Risk Assessment, Bandiana Military Area, November 2020.

> Golder (2020b), Bandiana Military Area, PFAS Management Area Plan, November 2020.

> GHD (2016), Defence per- and poly-fluoroalkyl Substances (PFAS), Environmental Management Preliminary Sampling Program, Albury Wodonga Military Area (Bandiana), September 2016.

2.2.1 Source Areas

Previous investigations identified several Source Areas where PFAS has been detected in soil, surface water or groundwater at concentrations exceeding the adopted assessment levels. These are shown in Figure 2, Appendix A, and include the following:

South Bandiana:

- Source Area 1 (SA1) – Petroleum Platoon – Former Fire training Ground.
- Source Area 2 (SA2) – Base Fire Services (BFS) – Former Fire Training Ground.
- Source Area 5 (SA5) – Petroleum Platoon – Fuel Handling Facility.
- Source Area 6 (SA6) – Current Fire Training Area, Building 600.
- Source Area 7 (SA7) – Old Fire Station, Building 421.
- Source Area 9 (SA9) – Petroleum, Oils and Lubricants (POL), Building 490.

North Bandiana:

- Source Area 10 (SA10) – Former Unit Training Area, between Warehouse 1 and 2.
- Source Area 11 (SA11) – Fire Extinguisher Disposal – Warehouse 13.
- Source Area 12 (SA12) – Armoured Vehicle Maintenance Training, Building 100

East Bandiana:

- Source Area 13 (SA13) – Fire Station – Current.
- Source Area 14 (SA14) – Former Unit Training, Building 592.
- Source Area 15 (SA15) – Former Unit Training – Football Field.

The highest On-Site concentrations of PFAS in soil, sediment, surface water and groundwater were generally identified within and adjacent to source areas, indicating the soil and sediment within source areas are continuing to act as a source of PFAS identified within the On-Site and Off-Site Jack in the Box Creek and Kiewa River catchments (Golder, 2020b).

Areas of soil contamination that exceeded residential human health screening levels were limited to identified On-Site source areas, which are not used for residential purposes. Given the reported concentrations of PFAS in soil and grass, and the nature and behaviour of PFAS in the environment, there is the potential for risk to aquatic ecosystems Off-Site.

PFAS concentrations were detected above the limit of reporting for drinking water and recreational groundwater guideline values in some On-Site groundwater monitoring wells located in the vicinity of Source Areas SA1, SA7, SA9, SA12, SA13, SA14, and SA15 (Golder, 2018). Off-Site PFAS concentrations were detected in two (2) groundwater monitoring wells (lower Jack in the Box Creek Catchment) and in one (1) groundwater monitoring well located in the floodplain on the Kiewa River Catchment. In both cases, the drinking water guidance values were exceeded. It is also noted that PFAS was found to exceed the drinking water guideline values in an extraction bore (for irrigation and chickens drinking water purposes) in a property within the Management Area.

Drainage channel sampling identified detectable concentrations of PFAS. The highest concentrations were reported close to identified source areas. Off-Site, exceedances of low PFAS concentrations were reported in most surface water samples.

The DSI (Golder, 2018) concluded that concentrations of PFAS in soil, sediment and surface water exceed the adopted ecological screening criteria On-Site and Off-Site in the Jack in the Box Creek and Kiewa River catchments (Golder, 2020b).

Following the completion of the DSI, a number of areas of uncertainty or data gaps were identified, including:

- The nature and extent of On-Site surface water contamination;

- Representativeness of groundwater sampling at some locations;
- Location of the groundwater flow divide and extent of groundwater impacts;
- Concentrations in Off-Site surface water during low flow conditions;
- Soil, sediment, surface water and groundwater interactions; and
- PFAS discharges in sewer.

Where possible, these areas of uncertainty will be addressed through implementation of the OMP or through additional investigations as part of the PMAP delivery (Golder, 2020b).

2.2.2 Migration Pathway

The key migration pathways of PFAS off South Bandiana and North Bandiana is via surface water which flows primarily into Jack in the Box Creek and then the Wodonga Creek. In East Bandiana the key migration pathway Off-Site is via surface water and groundwater which both flow towards the Kiewa River.

Key potential and existing exposure pathways include:

- Ingestion of impacted water for drinking or cooking purposes;
- Home production of food (such as livestock, fruit and vegetables, fish and eggs) using impacted water and consumption of home-produced food;
- Direct contact with impacted soil, sediment, surface water and/or groundwater for human and ecological receptors;
- Incidental ingestion of impacted soil, sediment, surface water/or groundwater for human and ecological receptors; and
- Bioaccumulation in ecological receptors through ingestion of other impacted flora and fauna.

2.2.3 Receptors

Potential current and future receptors On-Site include Defence military personal, personnel residing in temporary accommodation On-Site, contractors and visitors, teachers and children at Bandiana Primary School, adults and children attending the Neighbourhood House and sheep in South Bandiana.

Off-Site potential and existing current and future receptors include residents, commercial/industrial workers, recreational users, livestock and terrestrial and aquatic ecosystems (Golder, 2020c).

3 Data Quality Objectives

This SAQP has been developed based on a set of Data Quality Objectives (DQO) in reference to the DQO presented in the DSI (Golder, 2018), and based on guidance presented in the US Environmental Protections Agency (EPA, 2006), and NEPM 2013 (Schedule B2). The DQO process comprises the following seven steps:

- Step 1: State the problem
- Step 2: Identify the Decision
- Step 3: Identify the Information Inputs
- Step 4: Define the Boundaries of the Study
- Step 5: Develop the Analytical Approach
- Step 6: Specify Performance or Acceptance Criteria
- Step 7: Develop the Plan for Obtaining the Data

The DQOs are detailed in Table 3-1.

Table 3-1 Data Quality Objectives

Data Quality Step	Description (Golder, 2020b)
State the Problem	Some protected environmental values of surface water and groundwater within some Off-Site areas have been precluded[1]. However, the HHERA (Golder, 2020a) concluded that the human health risks to both On-Site and Off-Site receptors, under current exposure conditions are low and acceptable. The only potentially unacceptable human health risks were associated with unrealised scenarios, which were assessed as part of the HHERA to inform stakeholders of potential future risks. Ongoing monitoring is required to be undertaken as part of the BMA PMAP to assess potential changes in receptor exposure conditions. These include the assessment of changes related to precluded protected beneficial use.
Identify the Decision	The goal of the OMP is to monitor the nature and extent of PFAS impacts, and to identify trends and changes to PFAS impacts in the Management Area. This will allow decisions to be made regarding the assessment of risks to human and ecological receptors into the future (i.e. Updating the conceptual site model), and whether the OMP need to be amended e.g. increasing concentrations may require increased monitoring locations and/or frequencies or decreasing concentrations may warrant a decrease in the frequency or number of locations.
Identify the Information Inputs	The primary information inputs include observations and data obtained through the collection and analysis of representative samples of sediment, surface water and groundwater. The following additional information inputs will also apply: ▪ Objectives and scope of works of this OMP; ▪ Updates to national regulations and guideline documentation, particularly published assessment criteria; and ▪ Information gathered through stakeholders regarding specific land use practices within the Management Area. Particularly, information pertinent to the exposure conditions assessed within the HHERA (Golder, 2020c).
Define the Boundaries of the Study	Ongoing monitoring will be undertaken within the Management Area as presented in Figure 1, Appendix A. This includes On-Site and Off-Site areas.
Develop the Analytical Approach	The purpose of this step is to define the parameters of interest, specify action levels and combine the outputs of the previous DQO steps to develop a series of options if certain trigger events occur. The key decision rules for the OMP are: ▪ Has the analytical data collected met the Data Quality Indicators (DQI) required by the NEMP (HEPA, 2020) and the SAQP? ▪ Have stable, increasing or decreasing trends in PFAS concentrations been established using appropriate statistical methods? ▪ Do PFAS concentrations exceed the guidelines and/or the trigger values established within the HHERA? If so, does this indicate an unacceptable level of risk? If so, is a review of the PMAP required?
Specify Performance or Acceptance Criteria	The key acceptance criteria for the OMP are: ▪ The acceptable field and laboratory DQIs will be in accordance with NEMP 2.0 (HEPA, 2020) and NEPM (2013) and must be detailed in the SAQP. A review of data quality is to be undertaken and documented to minimise the potential for decisions errors. ▪ The adopted guideline values will be in accordance with the NEMP 2.0 (HEPA, 2020) as updated and will be used to screen analytical results obtained and to determine whether a revision of risk is required. ▪ The laboratory limit of reporting (LOR) should be below the adopted guideline values where technically possible.
Develop the Plan for Obtaining the Data	The OMP provides a list of the proposed monitoring locations, frequencies, and analysis. This SAQP has been developed prior to beginning the monitoring program.

Notes:
1. Protection of beneficial uses has been updated to environmental values to reflect the updates to Victorian Legislation, Environmental Reference Standard (EPA, 2021)

An assessment of the Data Quality Indicators (DQIs) relating to both field and laboratory procedures will be undertaken with appropriate documentation provided for each environmental element or media assessed. The DQIs adopted for the DSI are summarised in Table 3-2.

Table 3-2 Data Quality Indicators

Data Quality Indicator	Detail
QA Documentation	Provision of appropriate work plans, DQI and DQO defined for the Site and all QA/QC aspects documented.
Bias	A measure of the potential distortion in an analysis which can result in errors in one direction (e.g. one laboratory consistently higher results or consistent poor spiked matrix recovery). Bias will be assessed with reference to the analysis of spiked matrix samples (NEPC, 2013).
Representativeness	A qualitative measure of the confidence that data is representative of each medium present on the Site. Use of appropriate and documented sampling methods, sampling handling, preservation and transport and holding times.
Precision:	A quantitative measure of data variability or reproducibility, measured by the calculation of %RPD values for duplicate samples (i.e. measure of agreement). Precision in DQI can be measured as follows: • Percentage of the mean of the measurement such as Relative Percent Difference (i.e. %RPD). The %RPD will be calculated for the field and secondary duplicate (i.e. inter and intra-laboratory analysis); and • Use of similar analytical method and instrument (e.g. for inter-laboratory assessment). The %RPD will be considered as acceptable if the values are less than 30% (NEPC, 2013). Should there be a result that is greater than 30% difference, then a "review should be conducted of the cause (e.g. instrument calibration, appropriateness of method used)" (NEPC, 2013). Laboratory analysis of intra- and inter-laboratory samples (1 per 10 samples collected) to be collected.
Accuracy	A quantitative measure of the closeness of data to a 'true value', measured by the analysis of spike, blank and laboratory control samples (LCS). The LCS consists of a standard reference material or a matrix of known concentration. For the purpose of assessing accuracy it is required that at least one LCS for each process batch[1] be analysed (NEPC, 2013).
Comparability	A qualitative measure of the confidence that data may be considered to be equivalent for each sampling and analytical event. By use of standard procedures, comparable methods, qualified personnel and review of sample integrity. When all results have been received, Cardno will undertake a full review of the data for any anomalies in consideration of historical data at each location (where available), such as first-time detections or exceedances being reported at locations which have not had detections or exceedances previously. If potentially anomalous data is identified or suspected, further confirmatory measures will be undertaken such as re-extraction and reanalysis of the sample by the laboratory and/or additional data quality review.
Completeness	A measure of the amount of usable data (expressed as a percentage - %) from a data collection activity, based on completeness of test program, overall QA/QC completeness and validity of data set.

Notes:
1. The NEPM Schedule B3 – Guideline on Laboratory Analysis of Potentially Contaminated Soil defines a laboratory process batch to consist of up to "20 samples that are similar in terms of matrix and test procedure, and are processed as one unit for the QC purposes" (NEPC, 2013).

4 Sampling Location Rationale and Methodology

4.1 Monitoring Schedule

The proposed monitoring intervals for surface water, sediment and groundwater as outlined in the OMP (Golder, 2020c) are as follows:

Table 4-1 Monitoring Intervals

Media	Locations	Frequency	Rationale
Surface Water	All	Biannual ▪ August to October ▪ February to May	Surface water is the primary pathway for PFAS resulting in exposure to human and ecological receptors. The OMP states that consideration should be made to conduct surface water sampling after "reasonable rain events" (>35mm over 4 days). Cardno will endeavour to complete sampling following reasonable rain events if they occur during the sampling event. A review of weather forecast will be taken into consideration when planning of sampling activities. August to October time period is to target when high flows are generally exhibited (defined as water level >1.5 m and discharge >1,500 mL/day[1]). February to May time period is to target when low flows are generally exhibited (defined as water levels <1.0 m and discharge <1,000 mL/day[1]).
Sediment	All	Annual ▪ February to May	Timing in February to May to correspond with surface water sampling undertaken in low flow conditions.
Groundwater	OMC and Shepparton Colluvium Locations	Annual ▪ August to October	Sampling is proposed in August to October for these wells as groundwater in these units was deep (>12 m below ground) and lower hydraulic conductivities were observed.
	Shepparton Fluvium and Coonambigdal Fluvium	Biannual ▪ August to October ▪ February to May	Sampling is proposed biannually during February to May and August to October as groundwater in these units is shallow and higher hydraulic conductivities were observed. Additionally, biannual sampling is proposed as these well locations generally exhibited higher PFAS concentrations, are the primary pathway for PFAS from East Bandiana, and are likely to have a greater interaction with surface water (Golder, 2020c). Four annual groundwater sampling locations were altered to a biannual sampling frequency following the 2021 November/December event. This was due to significant increases in PFAS concentrations being reported at two On-Site locations compared with previous monitoring results. Two additional downgradient locations were included to monitor the potential for any PFAS migration and changes in risk profile. The appropriateness of a biannual sampling frequency for these locations will be reviewed again prior to each future monitoring event.

Notes:

1. **Water levels and discharge rates from Kiewa River gauge station 402222, accessed via https://riverdata.mdba.gov.au/bandiana**

4.2 Groundwater Monitoring

4.2.1 Monitoring Locations

The network of on- and Off-Site groundwater monitoring wells sampled as part of the OMP (Golder, 2020c) is summarised in Table 4-2 and shown in Figures 4A and 4B, Appendix A. Location codes for some locations have been updated after issue of the OMP. A table summarising location codes that have been updated is included in Appendix C. A table of available well construction details is also included in Appendix C.

Table 4-2 BMA Groundwater Monitoring Network

Catchment	Frequency	Monitoring Location	Total Number of Monitoring Locations	Target Area	Justification
On-Site Locations					
Jack in the Box Creek	Annual (August to October)	MW315, MW317, MW318	3	South Bandiana, On-Site, **Source Area 2**	Locations target groundwater within and downgradient of the source area.
		MW311	1	South Bandiana, On-Site, **Source Area 1**	Locations target groundwater within and downgradient of the source area.
	Bi-Annual	MW304, MW307	2	South Bandiana, On-Site, **Source Area 1**	Locations target groundwater within and downgradient of the source area.
		MW312	1	South Bandiana, On-Site	A point of discharge Off-Site into Jack in the Box Creek.
	Annual (August to October)	MW051, MW416, MW323	3	South Bandiana, On-Site, **Source Area 6**	Locations target groundwater discharge from Source Area 6.
		MW329	1	South Bandiana, On-Site, **Source Area 5**	Locations target groundwater discharge from Source Area 5 and 6.
		MW319, MW321	2	South Bandiana, On-Site, **Source Area 7**	Locations target groundwater discharge from Source Area 7.
Kiewa River		MW056[1]	1	South Bandiana, On-Site, **Source Area 9,** and Stormwater Ponds (wetlands)	Location targets perched groundwater identified within Source Area 9.
	Bi-Annual	MW342, MW345, MW346	3	North Bandiana, On-Site, Source Areas **10, 11 and 12**	Locations target contributions from Source Areas 10, 11 and 12.
		MW052, MW403, MW404, MW350_S, MW350_D, MW009, MW016, MW042, MW043, MW035, MW034, MW046I, MW046_D MW018, MW020, MW012, MW029, MW352, MW353, MW354	20	East Bandiana, On-Site, **Source Area 13, 14 and 15**	Locations target the East Bandiana Groundwater plume, which is emanating from Source Area 13 and discharging Off-Site across the eastern site boundary.
		MW351	1	East-Bandiana, On-Site	Location targets the downgradient boundary adjacent to the residential properties.
Off-Site Locations					

Jack in the Box Creek	Annual (August to October)	MW313	1	Upper Jack in the Box Creek	Location targets the residential estate located beyond the South Bandiana boundary.
	Bi-Annual	MW360	1	Lower Jack in the Box Creek	Locations target Lower Jack in the Box Creek where potential surface water/groundwater interactions may be occurring.
		MW361	1		
Kiewa River		MW357	1	Unnamed Creek and Kiewa River ox-bows	Location targets the point where the Unnamed Channel discharges into the Kiewa River.
		OTH019	1	Kiewa River ox-bows	A point of use location, where bore water is used for irrigation of home grown produce and drinking water for chickens.
		MW356	1	Kiewa River – main channel	Location targets the assessment of groundwater/surface water interactions at the Kiewa River.
1. MW056 was not sampled as scheduled in the E5 annual sampling event. It will be sampled in the upcoming E6 event and again in the E7 (normal frequency) to provide an additional data point, as it has not been sampled since October 2022.					

4.2.2 Groundwater Sampling Methodology

Groundwater monitoring will be undertaken by no purge HydraSleeve® method as detailed in Table 4-3.

Table 4-3 Groundwater Monitoring Wells – Sampling Method

Activity	Details
Well Gauging	Standing Water Level (SWL) will be gauged using either an interface probe or a water level meter. All wells will be measured against a specified mark at the top of the well casing. A consolidated groundwater gauging event for the wells to be monitored in a particular event will be undertaken at the commencement of each monitoring event to the extent practicable. Wells which have specific or difficult access constraints, or which are not scheduled for sampling in a particular event, will not be included.
Groundwater Field Parameters	Groundwater field parameters will be recorded with a water quality meter before sample collection (with the sample in a sterilised jar) prior to deployment of the HydraSleeve™, or using extra sample water from within the HydraSleeve™ decanted into a sterilised jar if the HydraSleeve™ is already deployed. The following field parameters will be recorded using a water quality meter: ▪ pH. ▪ electrical conductivity (EC). ▪ oxidation reduction potential (ORP). ▪ Dissolved oxygen (DO). ▪ Temperature. All field instruments (e.g. water quality meter) will be calibrated prior to field events to optimise the accuracy of the measurements taken. The water quality meter will be bump tested daily and re-calibrated as required.
Deployment of HydraSleeve®	HydraSleeves™ will be either deployed to the base of wells, or a minimum of 2.5m within the screen interval. If sufficient water column is available, the HydraSleeve™ will be positioned such that it does not sit at the base of the well where sediment may be present. HydraSleeve™ sampling devices will be left in wells for a minimum of 4 hours when deployed with bottom weights only, to allow restabilisation of the well following the slight disturbance caused by sampler deployment. For wells with a shallow water column (nominally less than 2.5 m in height, although depending on the length of the HydraSleeve™), HydraSleeve™ sampling devices will be deployed with both top and bottom weights, and will be left in the well for a minimum of 24 hours. This is to allow the top weight time to compress the HydraSleeve™ into the bottom

Activity	Details
	of the well and restabilisation of the well following the slight disturbance caused by sampler deployment. Available well construction details, including screen intervals, are presented in Appendix C.
Retrieval of HydraSleeves® (Sample Collection)	Samples will be collected via continuous pull method at a rate of approximately 30 cm per second, allowing the water to pass through the check value into the sample sleeve. Samples will be discharged immediately (to minimise changes in chemistry) via discharge tube.
Sample collection by bailer	Where insufficient water is retrieved with the HydraSleeve™, samples will be collected by bailer. Wells will be purged 3 bore volumes, or until dry, whichever is sooner, prior to sample collection.
Sample collection from tap	For wells with no direct access due to being encased or containing an in-well pump, such as private property bore OTH019, a sample will be collected from the tap or other available outlet to allow sampling of water from the bore. Where samples are collected from a tap or similar outlet, the well is to be purged by running the tap for 1 minute prior to sample collection.
Sample identification, preservation transport and holding times	Each sample will be labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming will be in accordance with Annex L of the DCMM (Defence, 2021b). Samples will be collected directly in into appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (COC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times will be undertaken in accordance with the requirements set out in Australian Standard AS/NZS 5567.1:1998 and AS 4482.1.
Field Records	Field records will include the following information: ▪ Sampling time, date and name of the sampler. ▪ Weather conditions. ▪ Sample collection method. ▪ Sampling equipment decontamination procedures where non-disposable sampling equipment is utilised. ▪ Calibration and bump test records. All sample documentation including field notebooks, reporting records, COC and equipment calibration certificates and procedures will be retained within project files.
Decontamination	Used HydraSleeves™ will be replaced with a new HydraSleeve™ after sample collection at each location, thus removing the need for decontamination. All re-usable sampling equipment (such as the interface probe) will be thoroughly washed using phosphate-free detergent (Liquinox), then double rinsed with de-ionised water before the sample collection.
Waste Management	All liquid wastes generated from the OMP activities will be temporarily stored On-Site (in an agreed location as approved by Base) within either a drum or an Intermediate Bulk Container (IBC) and disposed of Off-Site to a licensed facility. Disposal of the liquid waste is anticipated to occur once the drum(s) or container(s) are full, or as required. Any general solid waste generated during the sampling event will be disposed of either Off-Site or in appropriate bins On-Site, as approved by Base Support.
Laboratory Testing	All groundwater samples will be analysed for the full PFAS analytical suite (see Appendix B). The laboratory Limit of Reporting (LOR) for groundwater, PFAS – Full Suite – 28 Analytes, is 0.01-0.1 µg/L.
Laboratory Testing – Quality Control	Groundwater QC samples will be collected at the following frequencies, in accordance with the guidance in the PFAS NEMP (HEPA, 2020): ▪ Field duplicate (intra-laboratory) samples at 1 per 10 water samples or 1 per batch if the batch is less than 10 samples. ▪ Field triplicate (inter-laboratory) samples at 1 per 10 water samples to be sent to the secondary laboratory. ▪ Rinsate blank sample at 1 per day [collected off re-used sampling equipment (e.g. interface probe)].

Activity	Details
	▪ Trip blank samples of 1 per shipment to be included in the chilled sample containers upon transport to the laboratory. All QC samples will be tested for a full PFAS analytical suite (see Appendix B).
Laboratory Accreditation	All groundwater analysis will be undertaken by the following NATA-accredited laboratories: ▪ Primary analysis will be undertaken by ALS Global Laboratories. ▪ Secondary analysis will be undertaken by Eurofins.

4.3 Surface Water Monitoring

4.3.1 Monitoring Locations

The surface water locations sampled as part of the OMP (Golder, 2020c) are presented in Figures 3A and 3B (Appendix A) and are summarised in Table 4-4.

Table 4-4 OMP Surface Water Monitoring Locations and Frequency

Catchment	Frequency	Monitoring Location	Total Number of Monitoring Locations	Target Area	Justification
On-Site Locations					
Jack in the Box Creek	Bi-Annual	SW302, SW307, SW310	3	South Bandiana, On-Site, **Source Area 2**	Locations target surface water within and downgradient of the source area.
		SW311, SW313, SW316, SW321	4	South Bandiana, On-Site, **Source Area 1**	Locations target surface water within and downgradient the source area.
		SW322	1	South Bandiana, On-Site	Location targets surface water downgradient of the source area.
		SW323	1	South Bandiana, On-Site	Location targets drainage Off-Site downgradient of Source Areas 5, 6 and 7.
		SW324, SW326, SW332, SW336	4	South Bandiana, On-Site, **Source Area 6**	Locations target surface water discharge from Source Area 6.
		SW333, SW338	2	South Bandiana, On-Site, **Source Area 5**	Locations target surface water discharge from and downgradient of Source Areas.
Kiewa River	Bi-Annual	SW340	1		
Jack in the Box Creek	Bi-Annual	SW448	1	South Bandiana, On-Site, **Source Area 7**	Location targets surface water discharge from Source Area 7.
Kiewa River	Bi-Annual	SW346, SW349, SW355	3	South Bandiana, On-Site, **Source Area 9,** and Stormwater Ponds (wetlands)	Surface water locations target discharge into, within and discharging from the South Bandiana Stormwater Ponds.
		SW370, SW374, SW375	3	North Bandiana, On-Site, Source Areas **10, 11 and 12**	Locations target contributions from Source Areas 10, 11 and 12.
		SW379, SW380	2	East Bandiana, On-Site, **Source Area 13, 14 and 15**	Locations are targeting surface water discharge from Source Area 13.
		SW382, SW387, SW388	3	East-Bandiana, On-Site	Locations target surface water at the points of discharge from

					East Bandiana into the Kiewa River, and the Kiewa River floodplain.
Off-Site Locations					
Jack in the Box Creek	Bi-Annual	SW424, SW463	2	Upper Jack in the Box Creek	Locations target publicly accessible open space land use areas.
		SW427	1	Lower Jack in the Box Creek	Locations are targeting surface water along Jack in the Box Creek.
		SW430	1		
		SW431	1		
		SW432	1		Location targets several downgradient Off-Site sources identified within the DSI.
		SW434	1	Jack in the Box and Wodonga Creek confluence	Represents the down gradient point of monitoring within the Management Area within the Jack in the Box Creek catchment.
Kiewa River	Bi-Annual	SW409	1	Unnamed Creek	Location targets the creek near sensitive land use areas.
		SW403, SW405, SW412, SW462	4	Unnamed Creek and Kiewa River ox-bows	Locations target surface water Unnamed Creek and Kiewa River ox-bows downgradient of East and North Bandiana.
		SW395, SW396, SW397, SW400, SW401, SW470, SW471, SW487	8	Kiewa River ox-bows	Locations target the ox-bow lakes downgradient of East Bandiana source areas.
		SW390	1	Kiewa River – main channel	Kiewa River background location and represents conditions upstream of the Baranduda WTP and Middle Creek.
		SW393	1	Middle Creek	Location represents potential contributions from the Middle Creek catchment.
		SW398, SW404	2	Kiewa River – main channel	Locations target Kiewa River main channel and represents conditions downgradient of the On-Site discharges.
		SW416	1		Downgradient point of monitoring within the Management Area within the Kiewa River catchment.

4.3.2 Surface Water Sampling Methodology

The methodology for the surface water monitoring is detailed in Table 4-5.

Table 4-5 Surface Water Monitoring Methodology

Item	Details
Field parameters	Surface water physiochemical parameters (i.e. pH, electrical conductivity (EC), oxidation reduction potential (ORP), dissolved oxygen (DO), and temperature) will be recorded at the time of sampling using a pre-calibrated water quality meter. The water quality meter will be bump tested daily and re-calibrated as required. Field observations such as colour, turbidity, presence of suspended solids and odours, sheen, oily film, nuisance organisms, floating debris or frothing will be recorded on field sampling sheets. The condition of the water body that was sampled from including the type (lake, stream etc.) and channel width will also be recorded as applicable. Flow rate will also be quantitatively recorded where possible using the float method, with qualitative flow rates to be recorded where quantitative measurements are unable to be taken by field staff (such as when environmental conditions significantly limit visibility or there are access constraints).
Sampling Method	Where possible, surface water samples will be collected directly into laboratory supplied sample containers using a 'Grab' (manual) sample method via a long-handled sampling device. The sample container is secured to the end of the sampling device and is then lowered into the water, oriented with the capped opening facing downwards to avoid the collection of surface films. Where depth permits, the sample container should be positioned at least 10 cm below the surface water level and above the sediment bed before reorienting the sample container so that the capped opening is facing upwards, allowing it to fill. Samples will be collected in accordance with Australian/New Zealand Standards (AS/NZS 5667.1:1998) '*Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*'.
Sample Collection	Water samples will be placed directly into appropriately labelled, laboratory supplied sample bottles and packed in chilled containers for delivery to the laboratory under COC documentation. Sample containers will include water resistant labels attached to the sample bottles.
Sample identification, preservation, transport and holding times.	Each sample will be labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming will be in accordance with Annex L of the DCMM. Samples will be contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under COC documentation. Sample containers, preservation procedures, sample storage requirements and holding times will comply with the requirements set out in "Australian Standard AS/NZS 5567.1:1998 and AS 4482.1".
Field Records	Field records will include the following information: ▪ Sampling time, date and name of the sampler. ▪ Weather conditions. ▪ Sample collection method. ▪ Sampling equipment decontamination procedures where non-disposable sampling equipment is utilised. ▪ Calibration records. All sample documentation including field notebooks, reporting records, COC and equipment calibration certificates and procedures will be retained within project files.
Decontamination	All re-usable sampling equipment (such as the long-handled sampling device) will be thoroughly washed using phosphate-free detergent (Liquinox), then double rinsed with de-ionised water before the sample collection.
Laboratory Testing	All surface water samples will be analysed for the full PFAS analytical suite (see Appendix B). The LOR for surface water, PFAS – Full Suite (28 Analytes), is 0.01-0.1 µg/L.
Laboratory Testing – Quality Control	Surface water QC samples will be collected at the following frequencies in accordance with the guidance in the PFAS NEMP (HEPA, 2020): ▪ Field duplicate (intra-laboratory) samples at 1 per 10 water samples or 1 per batch if the batch is less than 10 samples. ▪ Field triplicate (inter-laboratory) samples at 1 per 10 water samples to be sent to the secondary laboratory. ▪ Rinsate blank sample at 1 per day [collected off re-used sampling equipment (e.g. interface probe)].

Item	Details
	▪ Trip blank samples of 1 per shipment to be included in the chilled sample containers upon transport to the laboratory. QC samples will be tested for a full PFAS analytical suite (see Appendix B).
Laboratory Accreditation	All surface water analysis will be undertaken by the following NATA-accredited laboratories: ▪ Primary analysis will be undertaken by ALS Global Laboratories. ▪ Secondary analysis will be undertaken by Eurofins.

4.4 Sediment Monitoring

4.4.1 Monitoring Locations

The sediment locations sampled as part of the OMP (Golder, 2020c) are presented in Figures 3A and 3B (Appendix A) and are summarised in Table 4-6.

Table 4-6 OMP Sediment Monitoring Locations and Frequency

Catchment	Frequency	Monitoring Location	Total Number of Monitoring Locations	Target Area	Justification
On-Site Locations					
Jack in the Box Creek	Annual (February to May)	SD323	1	South Bandiana, On-Site	Locations targets sediment down gradient of Areas 5, 6 and 7.
Kiewa River		SD346, SD355	2	South Bandiana, On-Site, **Source Area 9,** and Stormwater Ponds (wetlands)	Locations are targeting sediment from the South Bandiana Stormwater Ponds.
		SD375	1	North Bandiana, On-Site, Source Areas **10, 11 and 12**	Locations targets sediment down gradient of Source Areas 10, 11 and 12.
		SD382	1	East-Bandiana, On-Site	Location targets the points of discharge from East Bandiana into the Kiewa River, and the Kiewa River floodplain.
Off-Site Locations					
Jack in the Box Creek	Annual (February to May)	SD424, SD463	2	Upper Jack in the Box Creek	Locations are targeting down gradient of sources within South Bandiana
Kiewa River		SD412	1	Unnamed Creek	Locations are targeting impacts of North Bandiana within the Unnamed Creek
		SD395, SD396, SD397, SD400	4	Kiewa River ox-bows	Locations are targeting sediment within ox-bow lakes located on the Kiewa River floodplain within the Southern Pastoral Area.

4.4.2 Sediment Sampling Methodology

The methodology for sediment sampling is detailed in Table 4-7.

Table 4-7 Sediment Monitoring Methodology

Item	Details
Sample Collection	Sediment samples should be collected from the approximate mid-point of the flow pathway, to the extent practicable, and collected from the top ten centimetres using hand tools (e.g. sediment corer, hand auger or trowel). Sediment samples should be collected after the co-located surface water sample is collected to prevent agitating sediments into the water body and surface water sample matrix. Samples should be placed directly into appropriately labelled, laboratory supplied sample containers and packed in chilled containers for delivery to the laboratory under COC documentation. At each sampling location, the sediment sample will be visually assessed and observations (including physical description) recorded on field data sheets.
Field Records	Field records will include the following information: ▪ Sampling time, date and name of the sampler. ▪ Weather conditions. ▪ Sample collection method. ▪ Sampling equipment decontamination procedures where non-disposable sampling equipment is utilised. All sample documentation including field notebooks, reporting records, COC and equipment calibration certificates and procedures will be retained within project files.
Decontamination	All re-usable sampling equipment (such as a trowel) will be thoroughly washed using phosphate-free detergent (Liquinox), then double rinsed with de-ionised water before the sample collection.
Sample identification, preservation, transport and holding times.	Each sample will be labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming will be in accordance with Annex L of the DCMM (Defence, 2021b). Samples will be contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under COC documentation. Sample containers, preservation procedures, sample storage requirements and holding times will comply with the requirements set out in "Australian Standard AS/NZS 5567.1:1998 and AS 4482.1".
Laboratory Testing	All sediment samples will be analysed for the full PFAS analytical suite (see Appendix B). The LOR for sediment, PFAS – Full Suite (28 Analytes), is 0.0002-0.001 mg/kg.
Laboratory Testing – Quality Control	Sediment QC samples will be collected at the following frequencies in accordance with the guidance in the PFAS NEMP (HEPA, 2020): ▪ Field duplicate (intra-laboratory) samples at 1 per 10 sediment samples or 1 per batch if the batch is less than 10 samples. ▪ Field triplicate (inter-laboratory) samples at 1 per 10 sediment samples to be sent to the secondary laboratory. All QC samples will be tested for a full PFAS analytical suite (see Appendix B).
Laboratory Accreditation	All sediment sample analysis will be undertaken by the following NATA-accredited laboratories: ▪ Primary analysis will be undertaken by ALS Global Laboratories. ▪ Secondary analysis will be undertaken by Eurofins.

4.5 Quality Control Contingency Measures

In the event there are any issues identified with quality control samples, such as detects being reported in a blank, Cardno will request the laboratories to undertake a detailed review of the results, and to carry out re-analysis of the sample (if necessary) to confirm the detect. In the event that the detect in a blank is confirmed, Cardno will notify Defence and include a discussion as to the potential cause or source of the detect in the blank sample, if it can be determined, in the QA/QC evaluation prepared for each factual report. The QA/QC evaluation will also include discussion of any RPD exceedances, internal laboratory quality outliers or other data quality issues which are identified during the sampling event, and whether any of these issues are considered to impact on the overall reliability and usability of the data set.

4.6 Data Management

All data collected as part of the monitoring program will be reviewed and managed in accordance with the requirements of Annex L of the DCMM (Defence, 2021b), and uploaded into Defence's Environmental Data Management Software (EDMS). Data management will include the following:

- The Defence ESdat email address (DERP.LabReports@esdat.com.au) will be included on CoCs as a laboratory report recipient;
- The laboratory Project ID and the laboratory provided ESdat files will be populated to match the Project ID setup in the Defence ESdat;
- The location code and sample naming conventions outlined in Annex L of the DCMM will be followed;
- Field data will be uploaded to Defence's EDMS; and
- Laboratory data will be uploaded to Defence's EDMS, associated QA/QC data will be reconciled, and the laboratory data will be approved.

5 Assessment Criteria

5.1 Groundwater and Surface Water

The assessment levels adopted for groundwater and surface water in this SAQP are based upon the PFAS screening criteria specified in the OMP (Golder, 2020c), which were adopted based on the guidance in the PFAS NEMP (HEPA, 2020). The adopted assessment criteria for groundwater and surface water are detailed in Table 5-1. Screening levels will be reviewed and updated (if deemed necessary) as part of the OMP review process.

Table 5-1 PFAS Criteria for Groundwater and Surface Water

Exposure Scenario	Adopted Assessment Criteria		Guidance
	PFHxS and PFOS[4]	PFOA	
	µg/L		
Human Health – Surface Water Recreational	2[2]	10	PFAS NEMP (HEPA, 2020)
Human Health – Drinking Water Quality Guideline[1]	0.07[2]	0.56	PFAS NEMP (HEPA, 2020)
Ecological (99% species protection – high conservation value systems)	0.00023[3]	19	PFAS NEMP (HEPA, 2020)
Ecological (95% species protection – slightly to moderately disturbed systems)	0.13[3]	220	PFAS NEMP (HEPA, 2020)

1. Drinking Water screening guidelines have been adopted for screening purposes for Industrial Water use, Stock Water use and Agriculture/Parks/Gardens Water use.
2. Combined PFOS and PFHxS.
3. PFOS only; For 99% species protection, the criterion of 0.00023 µg/L is lower than the laboratory level of reporting (LOR), however, the PFAS NEMP (HEPA, 2020) allows for the adoption of the laboratory LOR as a screening level rather than a quantified measurement.
4. Where the guidance values refer to the sum of PFOS and PFHxS, this includes PFOS only, PFHxS only, and the sum of the two.

5.2 Sediment

It is noted that there are currently no Australian regulatory endorsed assessment levels for risk posed to ecology or human health by PFAS in sediment.

6 Deviations from the OMP

Details of deviations from the OMP (Golder, 2020c) and the associated impacts are as follows:

Table 6-1 OMP Deviations

Detail	Justification	Impact
Sampling frequency increased from annual to bi-annual at MW304, MW307, MW312 and MW342.	Four annual groundwater sampling locations were altered to a biannual sampling frequency following the 2021 November/December event. This was due to significant increases in PFAS concentrations being reported at two On-Site locations compared with previous monitoring results. Two additional downgradient locations were included to monitor the potential for any PFAS migration and changes in risk profile. The appropriateness of a biannual sampling frequency for these locations has been reviewed prior to each monitoring event and is still deemed appropriate.	No impact - increased frequency of sampling at these locations will allow for more timely monitoring of any PFAS migration and changes in risk profile.
Sampling of alternate wells MW325 and MW328, to replace blocked well MW326.	During the May 2022 Sampling event, damage to well MW326 at South Bandiana was observed. Damage included broken stickup housing and casing and a blockage suspected to be caused by debris entering the well, rendering the well unable to be sampled. Field Staff attempted to remove blockage, purge and sample well but were unsuccessful. During the October 2022 sapling event, two alternative groundwater wells, MW325 (downgradient) and MW328 (upgradient) targeting Source Area 6 were sampled to fill this data gap.	Moderate impact - as well MW326 is considered to be a critical location by the lead consultant (LC). However, wells MW325 and MW328 were sampled as replacements to provide data upgradient and downgradient of MW326.
Replacement of well MW326 with MW416.	In April 2023, MW326 was replaced by a new groundwater monitoring well MW416 in the same location.	No impact - the data gap is considered closed as this location is now able to be monitored by MW416.

7 Reporting

7.1 Factual Reporting

A factual report should be produced at the completion of each monitoring event that summarises the data and findings of each monitoring event. The report will be prepared in accordance with the Defence *PFAS OMP Factual Report Guidance* document (Department of Defence, 2021a). Each factual report will present the findings and contain the following information:

- Introduction.
- Scope of work completed.
- Field activities undertaken and description of sampling methodologies used.
- Field observations (e.g. condition of monitoring wells, description of purged water) and water quality parameter measurements.
- Use of appropriate nomenclature of sampling locations as per Defence Contamination Management Manual (DCMM) Annex L.
- Summary of any changes to the monitoring network condition that may affect data integrity, or require rectification works, and recommendations for repair, replacement or decommissioning of a location.
- Evaluation of the applicability of adopted assessment criteria.

- Review of the suitability of the data for assessment purposes (QA/QC evaluation).
- Summary tables presenting gauged groundwater levels.
- Presentation of inferred groundwater contours and inferred groundwater flow direction in a figure.
- Summary tables of analytical results in comparison to adopted assessment criteria generated through management of data on the Defence ESdat database, and naming of sampling locations as per DCMM Annex L.
- Figures showing results in accordance with the OMP Factual Report preparation guidance.
- Laboratory reports, COC documentation, field sampling records, data validation and QA/QC details, equipment calibration certificates, bump test records and other relevant documentation.
- Any deviations from the SAQP encountered during completion of the sampling event, justification for the deviations and any impacts of these changes on the data or program.

In the event that further investigation, management and/or remediation are required, recommendations will be presented in a separate 'technical memorandum'.

It is noted that projects are active and laboratory data is to be received by the Defence ESdat Web Interface at the time of laboratory reporting to the consultant (Department of Defence, 2019). The data are live and location data will be uploaded and reconciled as received.

7.2 Ongoing Monitoring Reporting

Upon completion of each monitoring period, an ongoing monitoring report (OMR) will be prepared in accordance with the Defence *PFAS OMP Annual Interpretive Report Guidance* document (Department of Defence, 2022). As a minimum, each ongoing monitoring report should include the following:

- The factual information described in Section 7.1.
- Evidence of compliance with the requirements of the SAQP and meeting stated objectives of the OMP.
- Relevant figures depicting sampling locations and site-specific hydrogeological features.
- Use of appropriate nomenclature of sampling locations as per DCMM Annex L.
- Laboratory results and analysis including comparison with relevant screening criteria as identified in each OMP; data to be managed through the Defence ESdat database, and naming of sampling locations as per DCMM Annex L.
- Assessment and commentary on appropriate QA/QC procedures.
- A discussion of analytical results in relation to the following:
    - Trends in PFAS concentrations, including an assessment of temporal changes and/or changes to the extent of PFAS impacts. Trends should be assessed using an appropriate statistical analysis approach (e.g. using Mann-Kendall or similar analysis), with a specified level of confidence based upon the number of monitoring rounds completed.
    - Consideration, based on data trends, as to whether any of the existing remediation / management measures should be re-assessed, with a view to potential modification, supplementation or cessation.
    - Assessment of whether changes to the CSM and/or risk assessment are required.
    - Whether recalibration or changes to the groundwater model are required to provide a better understanding of the potential future extent of PFAS impact in groundwater.
- Based on the data obtained, an assessment of the OMP sampling requirements with a view to establishing whether:
    - The number of locations monitored could be reduced, such as where PFAS concentrations are stable and are considered to present a low risk to receptors.
    - Additional monitoring locations are required, including the installation of new monitoring wells or sampling of additional existing wells (and/or private bores) to provide better understanding of the nature, extent or magnitude of PFAS impacts in a particular portion of the Management Area.
    - The frequency of monitoring should increase or decrease to provide better understanding of PFAS concentration fluctuations and potential risks to receptors.

- An overview of remedial works or construction and maintenance activities undertaken in the management area during the reporting period, which may impact the CSM. Defence will assist with understanding other activities occurring within the management area during the monitoring period.
- All deviations from the SAQP encountered in the monitoring period will be documented, along with a statement of how these deviations impact on the DQO or overall objectives of the OMP.
- A statement as to whether the risk profile has changed overall, or at any specific location in the Management Area (On-Site and Off-Site). Based on potential changes to the risk profile, recommendations would be made as to whether this should trigger an OMP and/or PMAP review, or other actions.
- The sampling event Factual Reports and SAQP for the relevant year of monitoring will be appended to the OMR.

In addition to the OMR, a Factsheet summarising the monitoring period and findings will be prepared to accompany the publication of the OMR.

7.3 Provision of Results to Private Property Owners

In addition to the reporting of groundwater, surface water and sediment data collected from private properties in the factual and interpretive reports described in Section 7.1 and Section 7.2, the analytical results of private property sampling will also need to be reported to the property landowners, by way of a factual results letter. The results letters will be delivered to the property owners following Defence review and approval and include the following information, as a minimum:

- A brief description of the purpose of the OMP;
- The PFAS assessment levels relevant at the time of sampling;
- The laboratory LORs;
- The analytical results of the samples collected;
- A description of how the data will be used; and
- Contact details of the appropriate Defence representative.

In the event that the results exceed screening criteria, a follow-up consultation will be conducted with the property owner by telephone unless otherwise directed.

Note: Identifying data for private properties, such as addresses, will not be included on the Defence ESdat database. However, the groundwater, surface water, soil, and sediment data will be included in the ESdat database.

7.4 SAQP Review

Prior to each monitoring event, the SAQP will be reviewed to ensure it complies with the following guidelines:

- PFAS National Environmental Management Plan (NEMP) Version 2.0, HEPA, 2020;
- National Environment Protection (Assessment of Site Contamination) Measure (NEPM), National Environment Protection Council (NEPC), 2013;
- Department of Defence, 2019. Pollution Prevention Guidance - Routine Water Quality Monitoring;
- Standards Australia 1998. AS/NZ 5667:1998 Water quality – sampling;
- Australian and New Zealand Guidelines, 2018. Australian and New Zealand Guidelines for Fresh and Marine Water Quality; and
- State guidelines: Environment Protection Authority (EPA) or equivalent state environmental regulators relevant guidelines e.g. Victoria's Industrial Waste Resource Guidelines (IWRG) Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 701.

Any changes to the SAQP identified as part of the review are to be documented by way of a revision of the SAQP.

8 References

General References

1. Australian Standard (2005), AS 4482-2005 Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 – Non-volatile and semi-volatile compounds.
2. ANZG (2018), Australian and New Zealand Guidelines for Fresh and Marine Water Quality.
3. Department of Defence (2019), Pollution Prevention Management Manual – Annex 1L: Pollution Prevention Guidance - Routine Water Quality Monitoring.
4. Department of Defence (2021a), PFAS OMP Factual Report Guidance, May 2021.
5. Department of Defence (2021b), Contamination Management Manual (DCMM), Annex L – Data Management, August 2019, Amended June 2021.
6. Department of Defence (2022), PFAS OMP Annual Interpretive Report Guidance, Version 0.4, October 2022.
7. Department of Defence, Department of Energy (2018), Quality System Manual Schedule B15 USEPA DQO Process.
8. EPA Victoria (2009), Industrial Waste Resources Guidelines, Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 701.
9. EPA Victoria (2020), Interim Position Statement on PFAS, Publication 1669.4.
10. The Heads of EPAs Australia and New Zealand (HEPA; 2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020.
11. National Environment Protection Council (NEPC) (2013), National Environmental Protection (Assessment of Site Contamination) Measure (as amended), registered May 2013.
12. National Health and Medical Research Council (NHMRC) (2011 – updated 2018), National Water Quality Management Strategy Australian Drinking Water Guidelines 6, August 2018
13. NHMRC (2019), Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water, August 2019.
14. Standards Australia/Standards New Zealand (1998), AS5667.1:1998 Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.
15. U.S. Environmental Protection Agency (USEPA; 2000), Guidance for the Data Quality Objectives Process (EPA QA/G-4).
16. USEPA (2002), Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8), November 2002.

Site Specific References

17. Golder (2018), PFAS Detailed Site Investigation (DSI), Bandiana Military Area, September 2018.
18. Golder (2020a), Human Health and Ecological Risk Assessment (HHERA), Bandiana Military Area, November 2020.
19. Golder (2020b), Bandiana Military Area, PFAS Management Area Plan (PMAP), November 2020.
20. Golder (2020c), Bandiana Military Area, PFAS Ongoing Monitoring Plan, November 2020.
21. GHD (2016), *Defence per- and poly-fluoroalkyl Substances (PFAS), Environmental Management Preliminary Sampling Program – Albury Wodonga Military Area (Bandiana)*, September 2016.

APPENDIX A

FIGURES

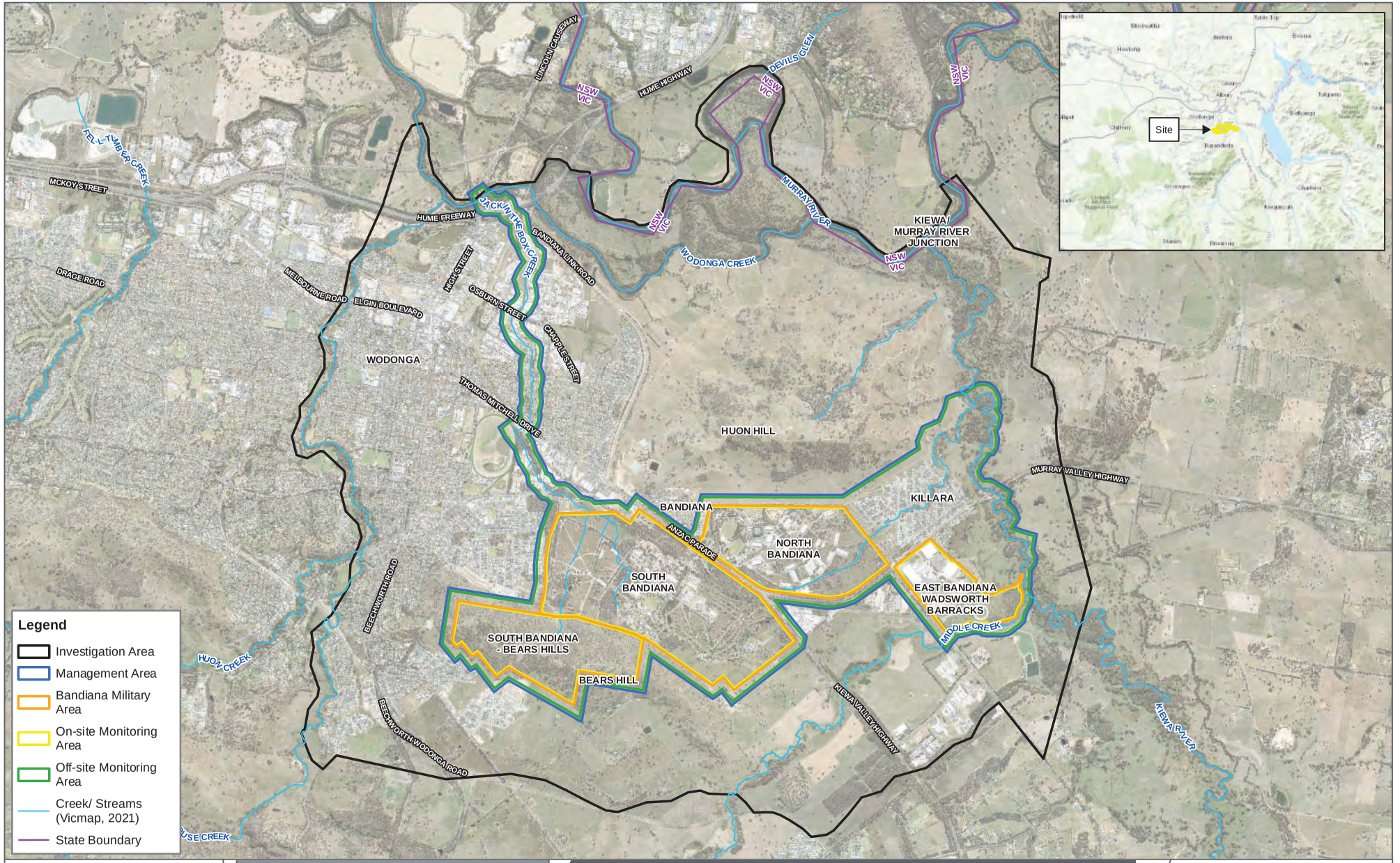


FIGURE 1

1:38,000 Scale at A3

Metres

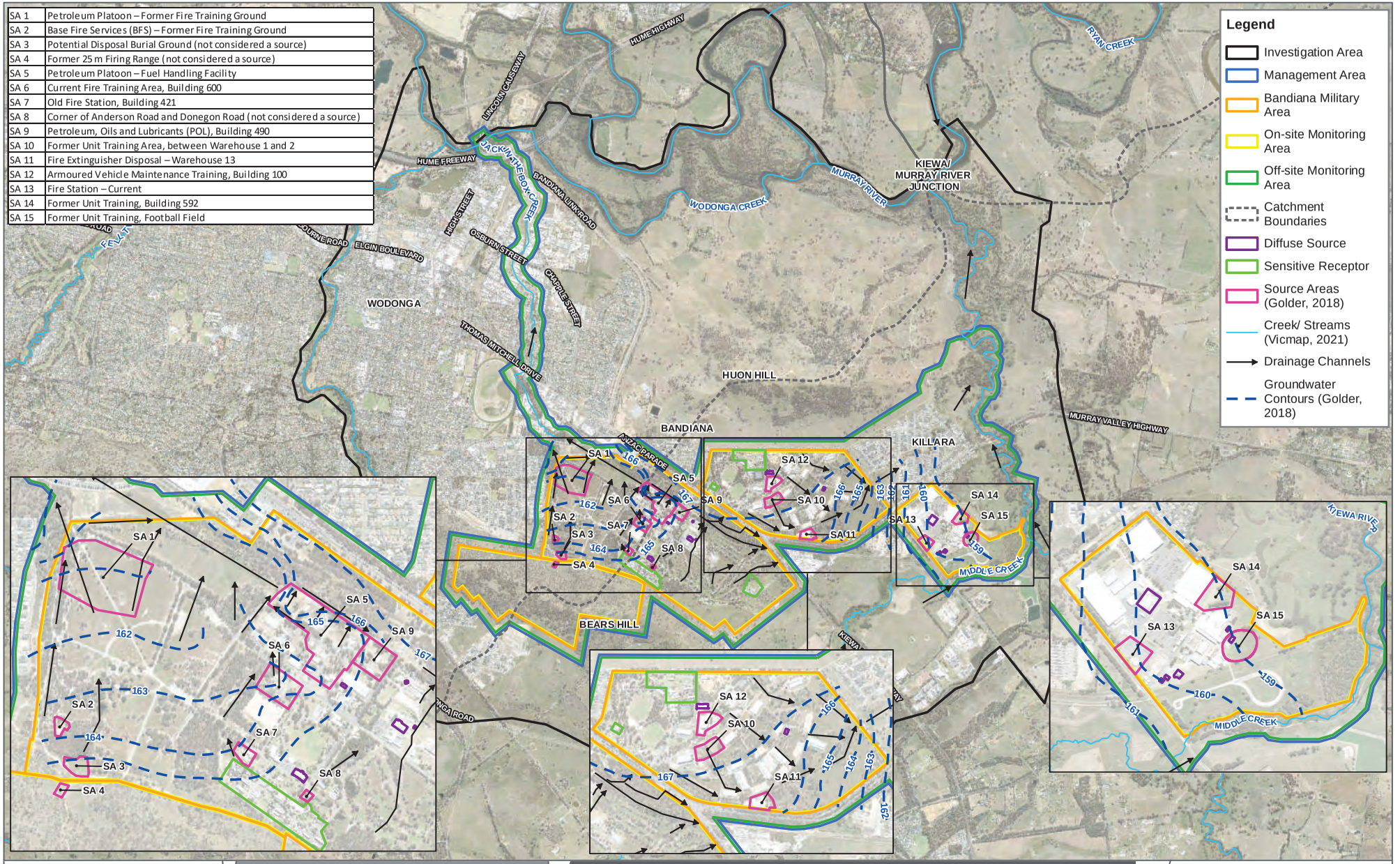
0 1,000 2,000

Site Locality Plan

SAMPLING & ANALYSIS QUALITY PLAN
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno

Map Produced by Cardno VIC
Date: 2021-10-14 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0150-SiteLocalityPlan_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)


SA 1 Petroleum Platoon – Former Fire Training Ground
SA 2 Base Fire Services (BFS) – Former Fire Training Ground
SA 3 Potential Disposal Burial Ground (not considered a source)
SA 4 Former 25 m Firing Range (not considered a source)
SA 5 Petroleum Platoon – Fuel Handling Facility
SA 6 Current Fire Training Area, Building 600
SA 7 Old Fire Station, Building 421
SA 8 Corner of Anderson Road and Donegon Road (not considered a source)
SA 9 Petroleum, Oils and Lubricants (POL), Building 490
SA 10 Former Unit Training Area, between Warehouse 1 and 2
SA 11 Fire Extinguisher Disposal – Warehouse 13
SA 12 Armoured Vehicle Maintenance Training, Building 100
SA 13 Fire Station – Current
SA 14 Former Unit Training, Building 592
SA 15 Former Unit Training, Football Field
Legend
Investigation Area
Management Area
Bandiana Military Area
On-site Monitoring Area
Off-site Monitoring Area
Catchment Boundaries
Diffuse Source
Sensitive Receptor
Source Areas (Golder, 2018)
Creek/ Streams (Vicmap, 2021)
Drainage Channels
Groundwater Contours (Golder, 2018)
HUME HIGHWAY
RYAN CREEK
LINCOLN CAUSEWAY
HUME FREEWAY
JACK IN THE BOX CREEK
BANDIANA LINK ROAD
KIEWA/ MURRAY RIVER JUNCTION
MURRAY RIVER
WODONGA CREEK
HIGH STREET
OSBURN STREET
CHAPPLE STREET
THOMAS MITCHELL DRIVE
ELGIN BOULEVARD
WODONGA
HUON HILL
BANDIANA
ANZAC PARADE
KILLARA
MURRAY VALLEY HIGHWAY
MIDDLE CREEK
BEARS HILL
KIEWA RIVER
FIGURE 2
1:38,000 Scale at A3
Metres
0
1,000
2,000
Source Area and Migration Pathways
SAMPLING & ANALYSIS QUALITY PLAN
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE
Cardno
Map Produced by Cardno VIC
Date: 2021-10-14 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0151-SourceAreas_MigrationPath_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

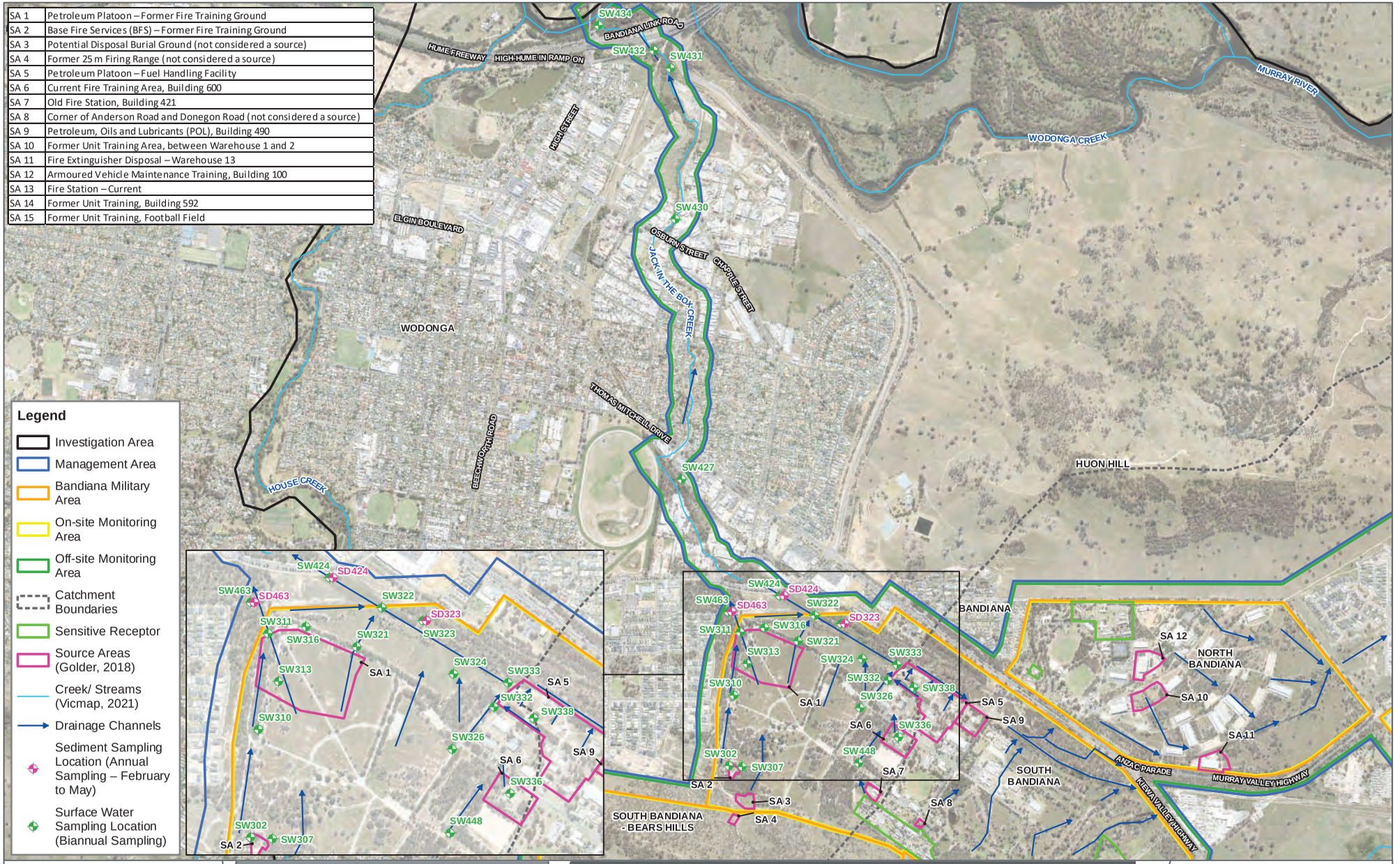


FIGURE 3A

1:20,000 Scale at A3

Metres

0 500 1,000

Surface Water and Sediment Monitoring Network – Jack in the Box Creek Catchment

SAMPLING & ANALYSIS QUALITY PLAN
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno

Map Produced by Cardno VIC
Date: 2021-10-15 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0152-SWandSED_JITBCC_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

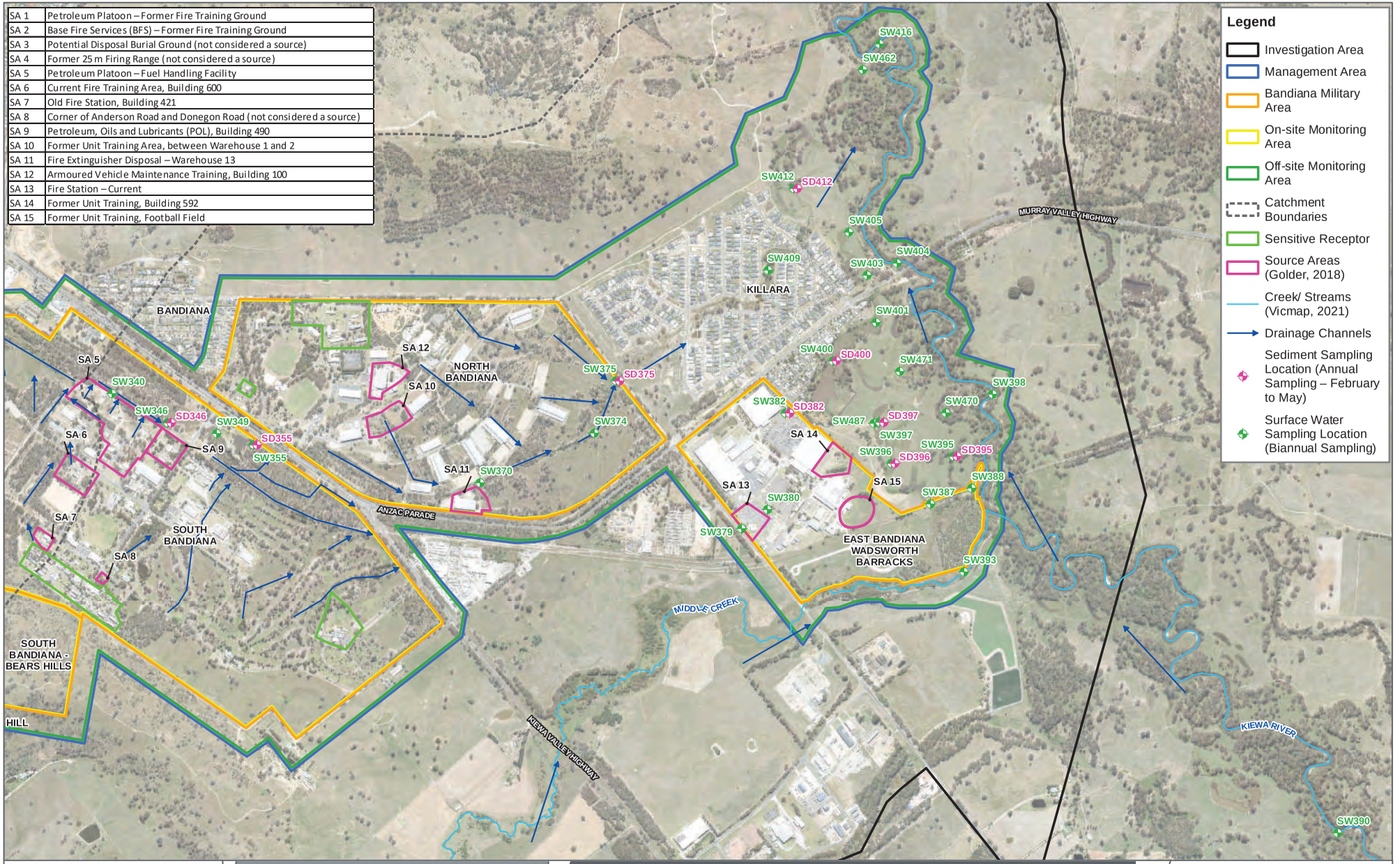


FIGURE 3B

1:16,000 Scale at A3

Metres

0 500 1,000

Surface Water and Sediment Monitoring Network – Kiewa River Catchment

SAMPLING & ANALYSIS QUALITY PLAN
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

N

Cardno

Map Produced by Cardno VIC
Date: 2021-10-15 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0153-SWandSED_KRC_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

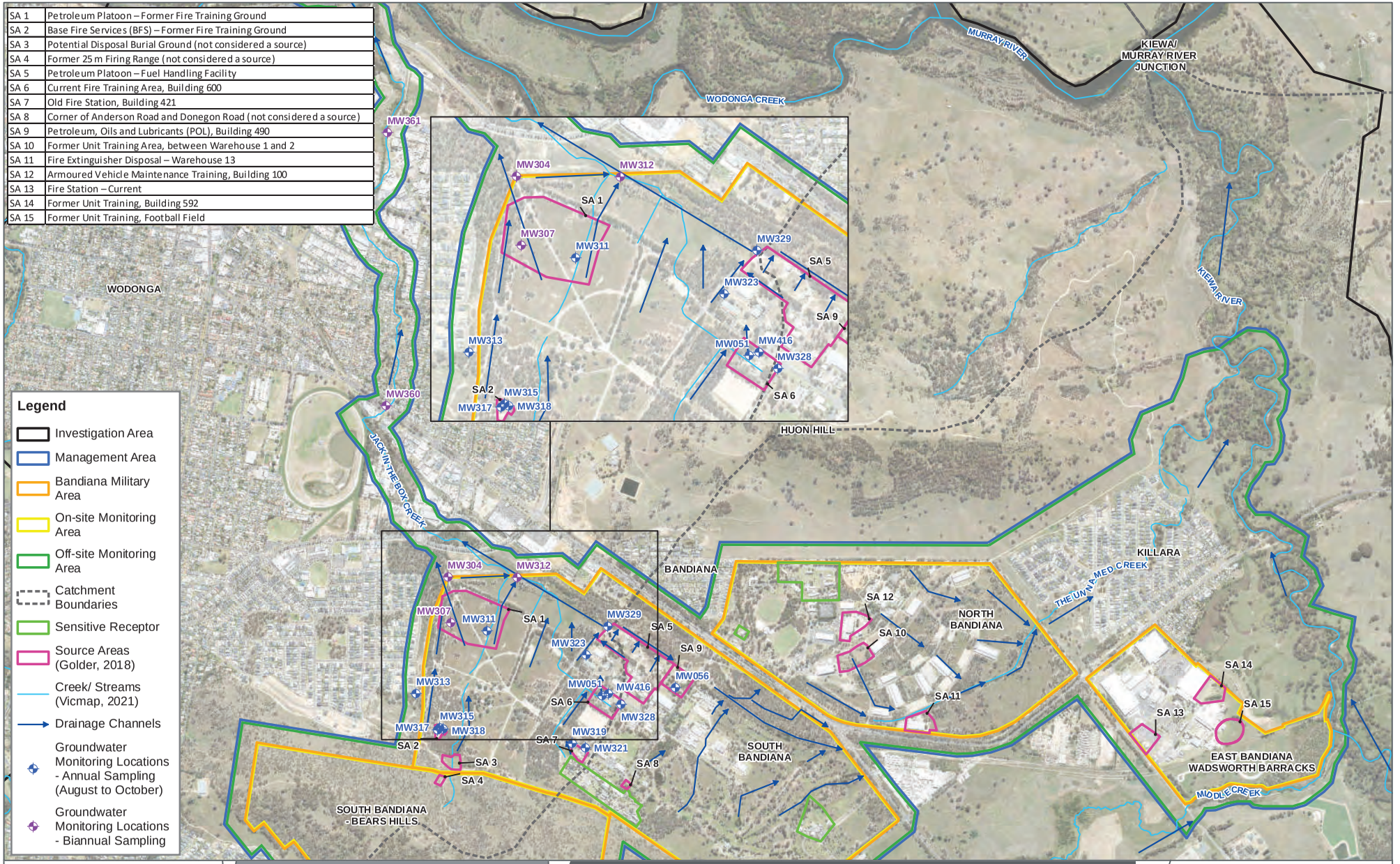


FIGURE 4A

1:20,000 Scale at A3

Metres

0 500 1,000

Groundwater Monitoring Network – Jack in the Box Creek Catchment

SAMPLING & ANALYSIS QUALITY PLAN
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2024-03-04 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0155-GW_MonitoringNetwork_JITBCC_Bandiana.mxd 04
Aerial Imagery Supplied by Metromap (March, 2021)

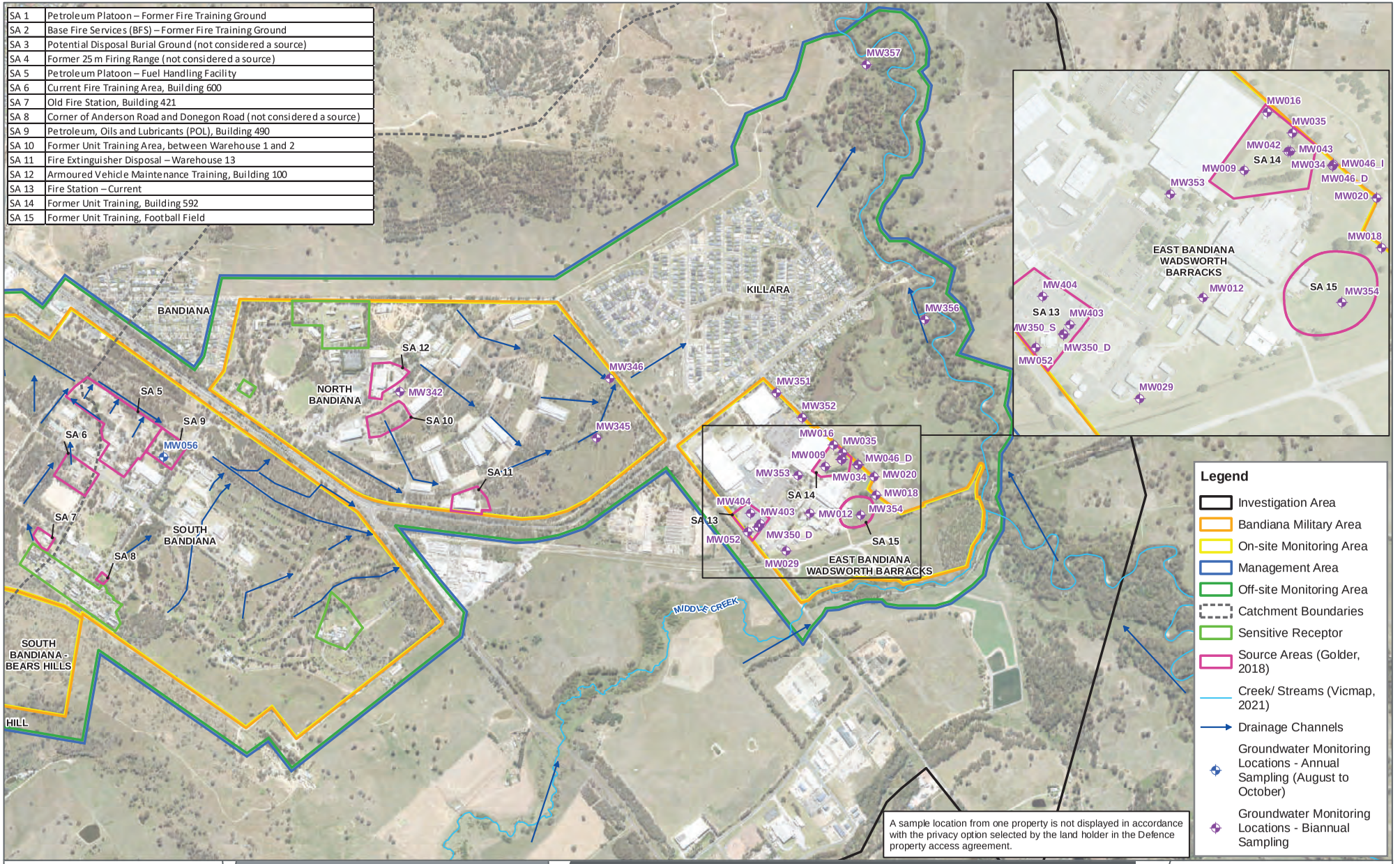


FIGURE 4B

1:16,000 Scale at A3

Metres

0 500 1,000

Groundwater Monitoring Network – Kiewa River Catchment

SAMPLING & ANALYSIS QUALITY PLAN
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno

Map Produced by Cardno VIC
Date: 2022-04-20 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0156-GW_MonitoringNetwork_KRC_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

APPENDIX

B

ANALYTICAL SUITE

PFAS Analytical Suite

Group	Analyte
Perfluoroalkane Carboxylates (PFCAs)	Perfluorobutanoic acid (PFBA)
	Perfluoropentanoic acid (PFPeA)
	Perfluorohexanoic acid (PFHxA)
	Perfluoroheptanoic acid (PFHpA)
	Perfluorooctanoic acid (PFOA)
	Perfluorononanoic acid (PFNA)
	Perfluorodecanoic acid (PFDA)
	Perfluoroundecanoic acid (PFUnA or PFUnDA)
	Perfluorododecanoic acid (PFDoA or PFDoDA)
	Perfluorotridecanoic acid (PFTrDA or PFTriDA)
	Perfluorotetradecanoic acid (PFTeDA)
Fluorotelomer Sulfonates (FTSs)	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2 FTS)
	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2 FTS)
	1 H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2 FTS)
	1H, 1H, 2H, 2H-perfluorododecane sulfonate (10:2 FTS)
Perfluroalkyl sulfonates (PFSAs)	Perfluorobutane sulfonic acid (PFBS)
	Perfluoropentane sulfonic acid (PFPeS)
	Perfluorohexane sulfonate, or perfluorohexane sulfonic acid (PFHxS)
	Perfluoroheptane sulfonate (PFHpS)
	Perfluorooctane sulfonate, or perfluorooctane sulfonic acid (PFOS)
	Perfluorodecane sulfonic acid (PFDS)
Perfluorooctane sulfonamidoethonals and perfluorooctane sulfonamidoacetic acids	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)
	N-ethyl perfluoro-1-octane sulfonamide (N-EtFOSA)
	2-(N-methyl perfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)
	N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)
	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)
	N-ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)

APPENDIX

C

WELL LOCATION CODES AND WELL CONSTRUCTION DETAILS

Catchment	Property	Location Code	Frequency	Alternative Name	Updated Easting	Updated Northing	TOC (ESdat export)	Depth (mbgl)	Top Screen Depth	Bottom Screen Depth	Aquifer
Kiewa River	On-base	MW009	Biannual	MW09, (0445E)MW009	495603.37	5999848.02	166.28	11.6	8.6	11.6	Shepparton Fluvium
Kiewa River	On-base	MW012	Biannual	MW12, (0445E)MW012	495534.14	5999634.04	167.36		156.92	159.82	Shepparton Fluvium
Kiewa River	On-base	MW016	Biannual	MW16, (0445E)MW016	495641.49	5999946.12	166.16		155.35	158.38	Shepparton Fluvium
Kiewa River	On-base	MW018	Biannual	MW18, (0445E)MW018	495834.70	5999717.39	165.43	9.27	6.27	9.27	
Kiewa River	On-base	MW020	Biannual	MW20, (0445E)MW020	495826.29	5999801.50	165.41	8.5	5.5	8.5	
Kiewa River	On-base	MW029	Biannual	MW29, (0445E)MW029	495426.45	5999463.69	168.11	10	7	10	
Kiewa River	On-base	MW034	Biannual	MW34, 0445_MW34, (0445E)MW034	495753.66	5999858.29	166.63	9.9	6.9	9.9	
Kiewa River	On-base	MW035	Biannual	MW35, (0445E)MW035	495683.72	5999911.25	166.22	10.3	7.2	10.3	
Kiewa River	On-base	MW042	Biannual	MW42, BH03, MW42/MW43, 0445_MW42, (0445E)MW042	495677.04	5999879.86	166.62	17	15	17	
Kiewa River	On-base	MW043	Biannual	MW43, (0445E)MW043	495680.27	5999879.94	166.55	12.6	9.8	12.3	
Kiewa River	On-base	MW046_D	Biannual	BH08, MW46/MW47, (0445E)MW046, (0445E)MW047	495752.45	5999855.99	166.49	21	18	21	
Kiewa River	On-base	MW046_I	Biannual	BH08, MW46/MW47, (0445E)MW046, (0445E)MW047	495752.45	5999855.99	166.48	13.4	11.4	13.4	
Jack in the Box Creek	On-base	MW051*	Annual	MW04, 0445S_MW04, (0445S)MW004	492170.69	5999846.02	187.95				
Kiewa River	On-base	MW052	Biannual	MW06-A, MW06A, MW6-A, 0445E_MW06-A, (0445E)MW006	495251.08	5999549.74	168.49		6.06	11.06	Shepparton Fluvium
Kiewa River	On-base	MW056**	Biannual	0445_MW361, 0445_MW157, 0445_MW157A, 0445S(BH111), (0445S)MW405, OTH019	492586.6	5999892.65	183.59	4			Shepparton Colluvium
Jack in the Box Creek	On-base	MW304	Annual	0445S_MW304	491289.32	6000521.98	176.131		18.78	21.78	Shepparton Colluvium
Jack in the Box Creek	On-base	MW307	Annual	0445S_MW307	491307.09	6000261.17	181.086		24.37	27.37	Shepparton Colluvium
Jack in the Box Creek	On-base	MW311	Annual	0445S_MW311	491514.62	6000214.45	182.452		19.71	22.71	Shepparton Colluvium
Jack in the Box Creek	On-base	MW312	Annual	0445S_MW312	491682.00	6000520.00	175.841		14.64	17.64	Shepparton Colluvium
Jack in the Box Creek	Off-base	MW313	Annual	0445_MW313	491109.26	5999857.37	193.128		30.89	33.89	Shepparton Colluvium
Jack in the Box Creek	On-base	MW315	Annual	0445S_MW315	491244.00	5999661.00	204.875		37.75	41.75	Shepparton Colluvium / Weathered OMC
Jack in the Box Creek	On-base	MW317	Annual	0445S_MW317	491231.00	5999650.00	204.364		34.93	38.93	Weathered Omeo-Metamorphic Complex
Jack in the Box Creek	On-base	MW318	Annual	0445S_MW318	491261.00	5999655.00	205.965		37.87	40.87	Shepparton Colluvium / Weathered OMC
Jack in the Box Creek	On-base	MW319	Annual	0445S_MW319	491998.00	5999572.00	199.524		38.789	41.789	Shepparton Colluvium / Weathered OMC
Jack in the Box Creek	On-base	MW321	Annual	0445S_MW321	492074.00	5999548.00	200.815		35.969	38.969	Shepparton Colluvium
Jack in the Box Creek	On-base	MW323	Annual	0445S_MW323	492076.00	6000078.00	184.472		19.84	22.84	Shepparton Colluvium
Jack in the Box Creek	On-base	MW326***	Annual	0445S_MW326	492216.00	5999856.00	188.819		28.03	31.03	Shepparton Colluvium
Jack in the Box Creek	On-base	MW329	Annual	0445S_MW329	492199.00	6000242.00	181.435		16.649	19.649	Shepparton Colluvium
Kiewa River	On-base	MW342	Annual	0445N_MW342	493664.00	6000189.00	180.605		13.42	17.42	Shepparton Colluvium
Kiewa River	On-base	MW345	Biannual	0445N_MW345	494560.00	5999979.00	168.316		4.48	7.48	Shepparton Fluvium
Kiewa River	On-base	MW346	Biannual	0445N_MW346	494621.00	6000250.00	166.944		6.8	9.8	Shepparton Fluvium

Catchment	Property	Location Code	Frequency	Alternative Name	Updated Easting	Updated Northing	TOC (ESdat export)	Depth (mbgl)	Top Screen Depth	Bottom Screen Depth	Aquifer
Kiewa River	On-base	MW350_D	Biannual	(0445E)MW350_D, (0445E)MW350_S, MW356(Stage4)	495299.30	5999571.30	168.229				Shepparton Fluvium
Kiewa River	On-base	MW350_S	Biannual	(0445E)MW350_D, (0445E)MW350_S, MW356(Stage4)	495299.30	5999571.30	168.233				Shepparton Fluvium
Kiewa River	On-base	MW351	Biannual	0445E_MW351	495382.00	6000184.00	164.79				Shepparton Fluvium
Kiewa River	On-base	MW352	Biannual	0445E_MW352	495498.59	6000070.77	164.493				Shepparton Fluvium
Kiewa River	On-base	MW353	Biannual		495479.00	5999808.00	166.625				Shepparton Fluvium
Kiewa River	On-base	MW354	Biannual	0445E_MW353	495767.20	5999625.80	166.142				
Kiewa River	Off-base	MW356	Biannual	0445E_MW354, (0445E)MW354	496059.80	6000518.40	156.882				Coonambigdal Fluvium
Kiewa River	Off-base	MW357	Biannual		495793.41	6001682.22	156.243				Coonambigdal Fluvium
Jack in the Box Creek	Off-base	MW360	Biannual	0445_MW357	490936.64	6001498.75	164.89				Shepparton Fluvium
Jack in the Box Creek	Off-base	MW361	Biannual	0445_MW360	490943.84	6003056.80	153.716				Shepparton Fluvium
Kiewa River	On-base	MW403	Biannual	0445_BH1, (0445)MW362	495312.20	5999591.49	166.926		6.98	9.98	
Kiewa River	On-base	MW404	Biannual	0445_BH2, MW363, (0445)MW363	495269.66	5999632.70	166.617		7.03	10.03	
Jack in the Box Creek	On-base	MW416***	Annual		492206.45	5999857.15	187.720		25.50	30.00	Shepparton Colluvium
Kiewa River	Off-base	OTH019	Biannual		Coordinates not shown		Private property bore - no well construction details available in ESdat.				

* Well was repaired and resurveyed in May 2023 due to damage to the standpipe
** Well was resurveyed in May 2023 as a point of reference location
*** MW326 was decommissioned in May 2023 and replaced with MW416

DSI/PMAP Location Code	Revised Location Code	Updated Location Code	Current Location Code for OMP
MW04	MW004	MW051	MW051
MW09	MW009	N/A	MW009
MW12	MW012	N/A	MW012
MW16	MW016	N/A	MW016
MW18	MW018	N/A	MW018
MW20	MW020	N/A	MW020
MW29	MW029	N/A	MW029
MW34	MW034	N/A	MW034
MW35	MW035	N/A	MW035
MW42	MW042	N/A	MW042
MW43	MW043	N/A	MW043
MW46	MW046	N/A	MW046
MW47	MW047	MW046	MW046
MW06-a	MW052	N/A	MW052
MW304	MW304	N/A	MW304
MW307	MW307	N/A	MW307
MW311	MW311	N/A	MW311
MW312	MW312	N/A	MW312
MW313	MW313	N/A	MW313
MW315	MW315	N/A	MW315
MW317	MW317	N/A	MW317
MW318	MW318	N/A	MW318
MW319	MW319	N/A	MW319
MW321	MW321	N/A	MW321
MW323	MW323	N/A	MW323
MW326	MW326	N/A	MW326
MW329	MW329	N/A	MW329
MW342	MW342	N/A	MW342
MW345	MW345	N/A	MW345
MW346	MW346	N/A	MW346
MW350_D	MW350	MW350	MW350
MW350_S	MW350	MW350	MW350
MW351	MW351	N/A	MW351
MW352	MW352	N/A	MW352
MW353	MW353	N/A	MW353
MW354	MW354	N/A	MW354
MW356	MW356	N/A	MW356
MW357	MW357	N/A	MW357
MW360	MW360	N/A	MW360
MW361	MW361	N/A	MW361
BH1	MW403	N/A	MW403
BH2	MW404	N/A	MW404
BH111	MW405	MW056	MW056
OTH019	OTH019	N/A	OTH019

About Cardno

Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Contact

Level 4
501 Swanston Street
Melbourne VIC 3000
Australia

Phone +61 3 8415 7777
Fax +61 3 8415 7788

Web Address
www.cardno.com

Cardno®

Appendix B OMP Groundwater Well Details

Table B.1: OMP Groundwater Well Details

Well ID	Top of Case (TOC) (mAHD)	Well Depth (mbgl)	Well Screen (mbgl)	Aquifer Unit
South BMA				
MW056[1]	183.59	3.68	*Unknown*	Perched Water
MW304	176.131	21.0	18.0-21.0	Shepparton Colluvium - Shallow
MW307	181.086	26.5	23.5-26.5	Shepparton Colluvium - Shallow
MW311	182.452	22.0	19.0-22.0	Shepparton Colluvium - Shallow
MW312	175.841	17.0	14.0-17.0	Shepparton Colluvium - Shallow
MW315	204.875	41.0	39.0-41.0	Shepparton Colluvium - Shallow
MW317	204.364	38.0	34.0-38.0	Shepparton Colluvium - Shallow
MW318	205.965	40.0	37.0-40.0	Shepparton Colluvium - Shallow
MW319	199.524	41.0	38.0-41.0	Shepparton Colluvium - Shallow
MW321	200.815	38.0	35.0-38.0	Shepparton Colluvium - Shallow
MW323	184.472	22.0	19.0-22.0	Shepparton Colluvium - Shallow
MW325	187.901	29.04	26.04-29.04	Shepparton Colluvium - Shallow
MW326	188.819	31.03	28.03-31.03	Shepparton Colluvium - Shallow
MW328	189.747	41.99	38.99-41.99	Shepparton Colluvium - Shallow
MW416	187.72	*30.0*	25.5-30.0	Shepparton Colluvium - Shallow
North BMA				
MW329	181.435	19.0	16.0-19.0	Shepparton Colluvium - Shallow
MW342	180.605	17.0	13.0-17.0	Shepparton Colluvium - Shallow
MW345	168.316	7.0	4.0-7.0	Shepparton and Coonambidgal Fluvium - Shallow
East BMA				
MW009	166.28	11.6	8.6-11.6	Shepparton and Coonambidgal Fluvium - Intermediate
MW012	167.36	10.2	7.2-10.2	Shepparton and Coonambidgal Fluvium - Shallow
MW016	166.16	9.8	6.8-9.8	Shepparton and Coonambidgal Fluvium - Shallow
MW018	165.43	9.27	6.27-9.27	Shepparton and Coonambidgal Fluvium - Shallow
MW020	165.41	8.5	5.5-8.5	Shepparton and Coonambidgal Fluvium - Shallow
MW029	168.11	10.0	7.0-10.0	Shepparton and Coonambidgal Fluvium - Shallow
MW034	166.63	10.0	7.0-10.0	Shepparton and Coonambidgal Fluvium - Shallow
MW035	166.22	10.2	7.2-10.2	Shepparton and Coonambidgal Fluvium - Shallow
MW042	166.62	17.0	15.0-17.0	Shepparton and Coonambidgal Fluvium - Intermediate
MW043	166.55	12.3	9.8-12.3	Shepparton and Coonambidgal Fluvium - Shallow
MW046_D	166.49	21.0	18.0-21.0	Shepparton and Coonambidgal Fluvium - Deep
MW046_I	166.48	13.44	11-13.44	Shepparton and Coonambidgal Fluvium - Intermediate
MW051	187.95	31.17	28.17-31.17	Shepparton Colluvium - Shallow

©JBS&G Australia Pty Ltd

MW052	168.49	11.06	6.06-11.06	Shepparton and Coonambidgal Fluvium - Shallow
MW346	166.944	9.0	6.0-9.0	Shepparton and Coonambidgal Fluvium - Shallow
MW350_D	168.229	19.5	17.5-19.5	Shepparton and Coonambidgal Fluvium - Deep
MW350_S	168.233	9.5	6.5-9.5	Shepparton and Coonambidgal Fluvium - Shallow
MW351	164.79	8.0	5.0-8.0	Shepparton and Coonambidgal Fluvium - Shallow
MW352	164.493	9.0	6.0-9.0	Shepparton and Coonambidgal Fluvium - Shallow
MW353	166.625	9.0	6.0-9.0	Shepparton and Coonambidgal Fluvium - Shallow
MW354	166.625	10.0	7.0-10.0	Shepparton and Coonambidgal Fluvium - Shallow
MW403	166.926	9.98	6.98-9.98	Shepparton and Coonambidgal Fluvium - Shallow
MW404	166.617	10.03	7.03-10.03	Shepparton and Coonambidgal Fluvium - Shallow
Off-base				
MW313	193.128	34.0	31.0-34.0	Shepparton Colluvium - Shallow
MW356	156.882	3.0	1.0-3.0	Shepparton and Coonambidgal Fluvium - Shallow
MW357	156.243	5.5	2.5-5.5	Shepparton and Coonambidgal Fluvium - Shallow
MW360	164.89	12.7	10.7-12.7	Shepparton Colluvium - Shallow
MW361	153.716	6.5	3.5-6.5	Shepparton Colluvium - Shallow

Notes:

1. A groundwater log and well installation information from the Defence Esdat database for MW056 is not available. Well depth obtained from OMP field records

©JBS&G Australia Pty Ltd

Appendix C OMP Factual Sampling Report – November 2021

©JBS&G Australia Pty Ltd

PFAS OMP Factual Report

Biannual Sampling Event November/December 2021

Bandiana Military Area

DEF19008



Prepared for
Department of Defence

12 May 2022

Cardno

Contact Information

Cardno Victoria Pty Ltd
ABN 47 106 610 913

Level 4, 501 Swanston Street,
Melbourne Vic 3000
Australia

www.cardno.com
Phone +61 3 8415 7777
Fax +61 3 8415 7788

Document Information

Prepared for	Department of Defence
Project Name	PFAS OMP Factual Report
File Reference	OMP002_Bandiana_E1 FactualReport.Rev01.docx
Job Reference	DEF19008
Date	12 May 2022
Version Number	1
Effective Date	12/05/2022

Author(s):

[redacted]

Approved By:

[redacted]

[redacted]

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Table of Contents

1	Introduction		1
	1.1	Background	1
	1.2	Purpose & Objectives	1
	1.3	Relevant Guidelines	1
2	Scope of Work		2
	2.1	Groundwater Monitoring	2
	2.2	Surface Water Monitoring	2
	2.3	Sediment Monitoring	2
	2.4	Data Management	2
	2.5	Deviations from the OMP SAQP	2
3	Methodology		4
	3.1	Groundwater Sampling Methodology	4
	3.2	Surface Water Sampling Methodology	5
	3.3	Quality Control / Quality Assurance	6
	3.4	Assessment Criteria	6
4	Field Observations and Results		7
	4.1	Conditions Impacting the Sampling Event	7
	4.2	Groundwater	7
	4.3	Surface water	9
	4.4	Data Validation	11
5	Summary and Conclusions		12
6	References		14

Appendices

Appendix A Figures

Appendix B Data Assessment Tables

Appendix C Laboratory Certificates

Appendix D Field Records & Calibration Certificates

Appendix E Data Quality Review

Appendix F Information about Environmental Reports

Tables

Table 2-1	Groundwater Monitoring Locations	2
Table 2-2	Surface Water Monitoring Locations	2
Table 2-3	Deviations from the SAQP	3
Table 3-1	Groundwater Sampling Method	4

Table 3-2	Surface Water Sampling Method	5
Table 3-3	Criteria for Groundwater and Surface Water	6
Table 4-1	Summary of Groundwater Results Exceeding Adopted Criteria	8
Table 4-2	Summary of Groundwater Results with First-time Detections or Exceedances	9
Table 4-3	Summary of Surface Water Results Exceeding Adopted Criteria	10
Table 4-4	Summary of Surface Water Results with First-time Detections or Exceedances	10
Table 5-1	Summary of Results	12

List of Abbreviations and Units

Chemical Names

DOC	Dissolved Organic Carbon
DO	Dissolved Oxygen
PFAS	Per- and Poly-fluoroalkyl Substances
PFHxS	Perfluorohexane sulfonic acid
PFOA	Per-fluoro-octanoic Acid
PFOS	Per-fluoro-octane Sulfonate
TDS	Total Dissolved Solids (salinity of water)
TSS	Total Suspended Solids

Technical Terms

AFFF	Aqueous Film-Forming Foam
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
AS	Australian Standard
AST	Above-ground Storage Tank
BGL	Below Ground Level
COC	Chain of Custody
CSM	Conceptual Site Model
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
HHERA	Human Health and Ecological Risk Assessment
HIL	Health Investigation Level
HSL	Health Screening Level
LOR	Limit of Reporting
N/A	Not Applicable
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environmental Protection Measure
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percentage Difference
SAQP	Sampling and Analysis Quality Plan
SEPP	State Environment Protection Policy

Units

ha	Hectares
mBGL	Metres Below Ground Level
mbTOC	Metres below Top of Casing
mg/kg	Milligram per Kilogram (approximately equivalent to ppm)
mg/L	Milligram per Litre
ppm	Parts per Million
µg/L	Micrograms per Litre
µS/cm	Micro Siemens per Centimetre (Electrical Conductivity - Water)

Site Specific

OMP	Ongoing Monitoring Plan
DCMM	Defence Contamination Management Manual
ESdat	Environmental data management software

1 Introduction

1.1 Background

Cardno was engaged by the Department of Defence ("Defence" or "the Client") to carry out the Per- and Poly-Fluoroalkyl Substances (PFAS) Ongoing Monitoring Plan (OMP) at Bandiana Military Area ("the site"). The Bandiana Military Area is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks). The location of the site is displayed in Figure 1 of Appendix A.

The OMP was carried out in accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP):

> Cardno, 22 October 2021. Reference: DEF19008, '*PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area* ', Rev 1.

For the purposes of this report:

> The Management Area is defined as comprising the site (Figure 1, Appendix A).

1.2 Purpose & Objectives

The objective of the OMP is to assess the changes in the nature and extent of PFAS within the environment, specifically where there is an identified potentially elevated risk to a receptor or a potential future risk to a receptor associated with Defence's historical use of Aqueous Film Forming Foam (AFFF).

The purpose of this PFAS OMP factual report is to provide an up-to-date status of the condition of the site as it is currently understood in relation to the most recent sampling event.

The objectives of the report are:

> To provide a succinct summary of the November/December 2021 sampling event and provision of analytical results with supporting tables and figures.

> To provide confirmation of the current understanding of risk.

> To provide supporting data for the assessment of management actions, where relevant.

1.3 Relevant Guidelines

This assessment has been undertaken in general accordance with applicable industry standards for a site investigation for the purpose, objectives and scope identified in this report. These standards are set out in:

> Australian and New Zealand Guidelines, 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

> Australian Standard AS 4482-2005 *Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds*.

> Department of Defence, Department of Energy, 2018, *Quality System Manual Schedule B15*.

> Heads of Environmental Protection Authority's Australia and New Zealand (HEPA), 2020, *PFAS National Environmental Management Plan (NEMP),* Version 2.0, January 2020.

> National Environment Protection Council (NEPC), 1999, *National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013)* (ASC NEPM).

> National Health and Medical Research Council (NHMRC), 2019, *Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water*.

> Standards Australia, 1998, AS/NZ 5667:1998 *Water quality – sampling*.

> U.S. Environmental Protection Agency (EPA), 2000, '*Guidance for the Data Quality Objectives Process (EPA QA/G-4)*'.

> USEPA, 2002, '*Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8)'.*

2 Scope of Work

Cardno carried out the following tasks in order to satisfy the purpose and objectives of this assessment.

2.1 Groundwater Monitoring

Sampling of selected groundwater monitoring wells was performed in accordance with the SAQP, applying methods set out in Section 3 of this report. The groundwater monitoring wells monitored as part of the OMP August to October biannual sampling event are presented in Table 2-1, and are shown in Figure 3, Appendix A.

Table 2-1 Groundwater Monitoring Locations

Monitoring Area	Location ID
On-Site	MW051, MW304, MW307, MW311, MW312, MW315, MW317, MW318, MW319, MW321, MW323, MW326, MW329, MW056, MW342, MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_I, MW046_D, MW052, MW345, MW346, MW350_S, MW350_D, MW351, MW352, MW353, MW354, MW403 and MW404.
Off-Site	MW313, MW360, MWW361, MW356, MW357 and OTH019

2.2 Surface Water Monitoring

The surface water sampling locations monitored as part of the OMP are presented in Table 2-2, and are shown in Figure 4, Appendix A.

Table 2-2 Surface Water Monitoring Locations

Monitoring Area	Location ID
On-Site	SW302, SW307, SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, SW448, SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW382, SW387 and SW388.
Off-Site	SW390, SW393, SW395, SW396, SW397, SW398, SW400, SW401, SW403, SW404, SW405, SW409, SW412, SW416, SW424, SW427, SW430, SW431, SW432, SW434, SW462, SW463, SW470, SW471 and SW487.

2.3 Sediment Monitoring

No sediment sampling was undertaken as part of the August to October biannual sampling event.

2.4 Data Management

All the data included in the report have been collected, uploaded to the ESdat database and reviewed according to the data management requirements of the Defence Contamination Management Manual (DCMM) Annex L.

2.5 Deviations from the OMP SAQP

Deviations from the SAQP were attributed to a lack of sampling media or access constraints, as summarised in 0. On-site and off-site sampling and testing was undertaken at 42 groundwater monitoring wells and 52 surface water locations. Four groundwater monitoring wells were sampled with an alternative sampling method (bailer). One groundwater monitoring well was sampled with an alternative sampling method (from a nearby tap supplied by the well) as the well was fully encased. Two groundwater monitoring wells and one surface water sampling location could not be sampled as they were found to be dry at the time of sampling.

Table 2-3 Deviations from the SAQP

Location	Deviation	Comment/Justification	Impact on Existing Dataset
Groundwater			
MW020	Alternate sampling method	Bailer sample due to insufficient water for HydraSleeve® deployment.	Minimal impact – samples taken during the Detailed Site investigation (DSI) (Golder, 2018) in 2017 employed low flow micropurge air bladder pump. Sampling technique has differed however unlikely to affect the reported concentrations.
MW315	Alternate sampling method	Bailer sample due to insufficient water for HydraSleeve® deployment.	No impact – Last sampled in 2017 for DSI (Golder, 2018) and a bailer was employed due to insufficient water for HydraSleeve deployment.
MW345	Alternate sampling method	Bailer sample due to insufficient water for HydraSleeve® deployment.	Minimal impact – DSI (Golder, 2018) employed low flow micropurge air bladder pump sampling technique. Sampling technique has differed however unlikely to affect the reported concentrations.
MW353	Alternate sampling method	Bailer sample due to insufficient water for HydraSleeve® deployment.	Minimal impact – DSI (Golder, 2018) employed low flow micropurge air bladder pump sampling technique. Sampling technique has differed however unlikely to affect the reported concentrations.
OTH019	Alternate sampling method	No monitoring well access, sample collected from tap following purging of bore by way of running tap for 1 minute.	No impact – First sampling of location, no historical data with differing sampling method. Ongoing sampling method is expected to be consistent.
MW317	Not Sampled	Bore dry	Low impact – Previously sampled in 2017 during the DSI (Golder, 2018). Reported concentrations were above the LOR for Sum of PFHxS and PFOS and below the LOR for PFOA. Reported concentrations were below the drinking water assessment criteria reported in the 2017 sampling. The closest downgradient well MW315 (approx. 15 m northeast of MW317) reported concentrations below the LOR for PFOA and Sum of PFHxS and PFOS. Both MW315 and MW317 are located within Source Area 2. Groundwater is located greater than 20 mbgl and no groundwater extraction is occurring near Source Area 2.
MW318	Not Sampled	Bore dry	Low impact – Well was dry during the 2017 DSI (Golder, 2018). Downgradient well MW315 reported concentrations below the LOR for PFOA and Sum of PFHxS and PFOS. Both MW315 and MW318 are located within Source Area 2. Groundwater is located greater than 20 mbgl and no groundwater extraction is occurring nearby Source Area 2.
Surface Water			
SW302	Not Sampled	Location dry	Low impact – Location dry in 2017 during the DSI (Golder, 2018). Surface water is expected to flow north. Surface water was sampled in downgradient locations SW307 and SW310.

3 Methodology

3.1 Groundwater Sampling Methodology

Groundwater monitoring was undertaken as detailed in Table 3-1.

Table 3-1 Groundwater Sampling Method

Activity	Details
Dates of Field Activity	8 to 17 November 2021 and 22 December 2021
Well Gauging	Standing Water Levels (SWL) were gauged using an interface probe. All wells were measured against a specified mark at the top of the well casing.
Groundwater Field Parameters	Groundwater water quality parameter field measurements (field parameters) were recorded with a water quality meter before sample collection (with the sample in a clean jar). The following field parameters were recorded using a water quality meter: ▪ pH. ▪ electrical conductivity (EC). ▪ oxidation reduction potential (ORP). ▪ Dissolved oxygen (DO). ▪ Temperature. Field parameters measured by the water quality meter were recorded on field data records. All field instruments (e.g. water quality meter) were calibrated by the equipment supplier to optimise the accuracy of the measurements taken. Bump tests were also completed daily by field staff during the monitoring event. Calibration certificates and bump test records are provided in Appendix D.
Deployment of HydraSleeve	The HydraSleeves® were deployed with attached weights in order for sample collection to begin at the lowest point of the well screen. HydraSleeves® were deployed following the gauging of all wells in the OMP on 8 December 2021.
Retrieval of HydraSleeves (Sample Collection)	New HydraSleeve® sampling devices were deployed. Where only bottom-weights were used, HydraSleeves® were left in wells for a minimum of 4 hours to allow restabilisation of the well following the slight disturbance caused by sampler deployment. Where both top and bottom-weights were used, HydraSleeves® were left in wells for a minimum of 24 hours to allow proper compression of the HydraSleeve® and restabilisation of the well following the slight disturbance caused by sampler deployment. Samples were collected via continuous pull method at a rate allowing the water to pass through the check valve into the sample sleeve. Samples were discharged immediately (to minimise changes in chemistry) via a discharge tube. HydraSleeves® were redeployed after sampling in preparation for the next sampling event.
Sample collection by bailer	As per the SAQP, where insufficient water is retrieved with the HydraSleeve®, samples will be collected by bailer. For bailer sampling, wells will be purged 3 bore volumes, or until dry, whichever is sooner, prior to sample collection.
Decontamination procedure	Dedicated HydraSleeves® were used at each groundwater monitoring well, thus removing the need for decontamination. Where HydraSleeves® could not be used, dedicated bailers were used instead which also did not require decontamination. All re-usable sampling equipment was thoroughly washed using PFAS & phosphate-free detergent, then double rinsed with clean water before the sample collection.

Activity	Details
Sample identification, preservation transport and holding times	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Samples were collected directly into appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (CoC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All groundwater samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Groundwater quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at 1 per 10 water samples (8 samples). ▪ Field triplicate (inter-laboratory) samples at 1 per 10 water samples (8 samples). ▪ Rinsate blank samples at 1 per day [collected off re-used sampling equipment (e.g. interface probe)] (9 samples total). ▪ Trip blank samples of 1 per shipment included in the chilled sample containers upon transport to the laboratory (5 samples total).

3.2 Surface Water Sampling Methodology

Surface water monitoring was undertaken using a grab method as detailed in Table 3-2.

Table 3-2 Surface Water Sampling Method

Item	Details
Dates of Field Activity	8 to 17 November 2021
Field parameters	Surface water field parameters (i.e. pH, electrical conductivity (EC), oxidation reduction potential (ORP), dissolved oxygen (DO), and temperature) were recorded at the time of sampling using a pre-calibrated water quality meter. Field observations such as odours and flow were also recorded on field sampling sheets.
Sampling Method	Where possible, the samples were collected directly into sample containers. The sample bottles were positioned at least 10 cm below the surface water level and above the sediment bed and orientated with the opening facing downwards to avoid the collection of surface films. Where access to surface water samples was difficult, the samples were collected using a long-handled sampling device with a glass container (scoop) that was lowered directly into the water body. Samples were then decanted into the laboratory-supplied sample containers. Samples were collected in accordance with Australian/New Zealand Standards (AS/NZS 5667.1:1998) '*Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples'*.
Decontamination	All re-usable sampling equipment (e.g. water scoop) were thoroughly washed using phosphate-free detergent (Liquinox), and subsequently double rinsed with de-ionised water before the sample collection.
Sample identification, preservation, transport and holding times.	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM.

Item	Details
	Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (COC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All surface water samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Surface water quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at 1 per 10 water samples (7 samples). ▪ Field triplicate (inter-laboratory) samples at 1 per 10 water samples (7 samples). ▪ Rinsate blank samples at 1 per day [collected off re-used sampling equipment (e.g. long-handled sampling device)] (9 samples total). ▪ Trip blank samples of 1 per shipment included in the chilled sample containers upon transport to the laboratory (5 samples total).

3.3 Quality Control / Quality Assurance

A critical aspect of site assessments is the demonstration of the quality of the data used as the basis for the assessment. This is achieved through a Data Validation process which includes a review of the following data quality indicators, as described in the SAQP:

- QA documentation.
- Bias.
- Data Representativeness.
- Data Precision & Accuracy.
- Data Comparability.
- Data Set Completeness.

A detailed review of these aspects has been undertaken, the results of which are presented in Appendix E. A summary of the data validation from the QA/QC review is included in Section 4.4 below.

3.4 Assessment Criteria

3.4.1 Groundwater and Surface Water

The adopted assessment criteria for groundwater and surface water are detailed in Table 3-3.

Table 3-3 Criteria for Groundwater and Surface Water

Exposure Scenario	Adopted Assessment Criteria		Guidance
	PFHxS / PFOS	PFOA	
	µg/L		
Human Health - Surface Water Recreational	2[2]	10	PFAS NEMP (HEPA, 2020)
Human Health - Drinking Water Quality Guideline[1]	0.07[2]	0.56	PFAS NEMP (HEPA, 2020)
Ecological (99% species protection – high conservation value systems)	0.00023[3,4]	19	PFAS NEMP (HEPA, 2020)

Ecological (95% species protection – slightly to moderately disturbed systems)	0.13[3]	220	PFAS NEMP (HEPA, 2020)

1. Drinking Water screening guidelines have been adopted for screening purposes for Industrial Water use, Stock Water use and Agriculture/Parks/Gardens Water use.
2. Combined PFOS and PFHxS.
3. PFOS only
4. The criterion of 0.00023 µg/L is lower than the laboratory level of reporting (LOR), however, the PFAS NEMP (HEPA, 2020) allows for the adoption of the laboratory LOR as a screening level rather than a quantified measurement.

4 Field Observations and Results

4.1 Conditions Impacting the Sampling Event

In the seven days prior to the sampling event (November 1 to November 7), 31.4 mm of rain was recorded at the nearest weather station (082056), located in Wodonga. During the sampling event (November 8 to November 17), 51.8 mm of rain was recorded at weather station 082056. The total rainfall observed in November 2021 (144.2 mm) was significantly higher than the historical average of 49.8 mm (1898 to 2021). All surface water sampling locations, excluding difficult to access on-base and Kiewa river locations (9 total), were sampled following a large rain event between 12 to 14 November resulting in sampling during periods of higher than average surface water flow. Kiewa River gauge station 402222 recorded a water level of 2.688 m and discharge of 3,380 mL/day on 15 November 2021, above the 1.5 m water level and 1,500 mL/day discharge as per the SAQP.

No on-site activities with the potential to impact sample collection or the results were noted.

4.2 Groundwater

4.2.1 Summary of Field Observations

4.2.1.1 Water quality parameter field measurements

Stabilised water quality parameter field measurements, water colour and turbidity observations recorded during the groundwater sampling program are presented in field sampling record sheets, included in Appendix D. Groundwater varied from clear to brown with low to medium turbidity and no notable changes were recorded relative to the DSI (Golder, 2018) observations.

4.2.1.2 Groundwater Elevation and Migration

Groundwater elevation and migration across the three bases included in the PFAS OMP summarised below:

- South Bandiana: Groundwater elevations observed at South Bandiana during the sampling event ranged from 160.332 mAHD at MW304 to 166.525 mAHD at MW329. Slight groundwater mounding was observed at MW329. Groundwater flow is inferred to be in a north-westerly direction toward the Jack in the Box Creek. Groundwater elevations and flow direction were generally consistent with those reported during the DSI investigation.
- North Bandiana: Groundwater elevations observed at North Bandiana during the sampling event ranged from 163.315 mAHD at MW345 to 166.536 mAHD at MW342. Groundwater flow is inferred to be in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the DSI investigation.
- East Bandiana: Groundwater elevations observed at East Bandiana during the sampling event ranged from 160.713 mAHD at MW052 to 155.484 mAHD at MW356. Groundwater flow is inferred to be in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the DSI investigation.

Groundwater elevation contours and flow directions for November 2021 are shown in Figure 3, Appendix A. Gauging records are presented in Appendix D.

4.2.2 Groundwater Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, and are presented in Table B1, Appendix B, and summarised in Table 4-1 below. Of the 42 primary samples that were tested, PFOA was reported above the limit of reporting in 21 samples, and Sum of PFHxS and PFOS in 34 samples.

Table 4-1 Summary of Groundwater Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR[3]	No. Results Above Drinking Water Criteria[3]	Significant Concentration Changes[4]
PFOS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW052, MW056, MW307, MW312, MW319, MW321, MW326, MW329, MW342, MW345, MW350_D, MW350_S, MW352, MW353, MW354, MW360, MW361, MW403, MW404, OTH019	0.00023[2]	70.4	35	-	MW307, MW342, (increase)
PFOA	MW043, MW052, MW307, MW350_S, MW403, MW404	0.56[1]	34.2	21	6	MW307, MW342, (increase)
Sum of PFHxS and PFOS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW052, MW056, MW307, MW312, MW319, MW321, MW326, MW329, MW342, MW345, MW350_D, MW350_S, MW353, MW354, MW360, MW361, MW403, MW404, OTH019	0.07[1]	422	34	31	MW307, MW342, (increase)

Note:

1. Drinking water assessment criteria
2. Ecological assessment criteria
3. Non-inclusive of quality control samples
4. Significant concentration change defined as an order of magnitude increase or decrease

Results have also been compared against available historical data (DSI) (Golder, 2018). The following locations have reported a significant change in concentration for this monitoring event:

- MW307: Sum of PFHxS and PFOS has increased by 3 orders of magnitude from a previous result of 0.37 µg/L in December 2017 to 422 µg/L in this event.
- MW342: Sum of PFHxS and PFOS has increased by 2 orders of magnitude from a previous result of 0.09 µg/L in December 2017 to 13.5 µg/L in this event.
- MW307: PFOA has increased by 3 orders of magnitude from a previous result of 0.01 µg/L in December 2017 to 34.2 µg/L in this event.
- MW342: PFOA has increased by 2 orders of magnitude from a previous result of below LOR in December 2017 to 0.22 µg/L in this event.
- All other concentrations reported during this event were generally consistent with previous sampling events.

Due to inconsistent results compared to the historical concentrations at MW307 and MW342, re-sampling of these locations was undertaken on 22 December 2021. Re-sampling results were generally consistent with the November 2021 reported PFAS concentrations. The above concentrations reported for MW307 and MW342 are from November 2021.

A summary of locations where a first-time detection, or a new exceedance of guideline values, of PFOS, Sum of PFHxS and PFOS, or PFOA, were reported is provided in Table 4-2 below. The laboratory reports are provided in Appendix C.

Table 4-2 Summary of Groundwater Results with First-time Detections or Exceedances

Deviation Type	Monitoring Well	Sum of PFHxS + PFOS concentration (µg/L)		PFOA concentration (µg/L)		PFOS concentration (µg/L)	
		November 2021	Previous Maximum	November 2021	Previous Maximum	November 2021	Previous Maximum
First-time detections	MW312	**0.16**	**0.12**	<0.01	<0.01	0.02	<0.01
	MW342	**13.5**	**0.09**	0.22	<0.01	9.21	<0.01
First-time exceedance of the NEMP (HEPA, 2020) drinking water guidelines	MW307	**422**	**0.37**	**34.2**	0.01	70.4	0.25
	MW326	**0.29**	0.03	<0.01	<0.01	0.03	0.03
	MW329	**0.17**	0.02	<0.01	<0.01	0.03	0.02

Note:
Location with first-time detection of PFOS + PFHxS, PFOA or PFOS in latest monitoring round
Location with a new exceedance of drinking water guideline values in latest monitoring round
Bold: Exceedance of drinking water guideline values
Exclusive of quality control samples.

Findings are summarised as follows:

- One groundwater sampling location (MW342) reported a first-time detection of PFOA.
- Two groundwater sampling locations (MW312 and MW342) reported a first-time detection of PFOS.
- No groundwater sampling locations reported a first-time detection of Sum of PFHxS + PFOS.
- Two groundwater sampling locations (MW326 and MW329) reported a first-time exceedance of the Drinking Water criteria for Sum of PFHxS and PFOS.
- One groundwater sampling location (MW307) reported a first-time exceedance of the Drinking Water criteria for PFOA.
- Due to a first-time exceedance of PFOA at MW307 and a first-time detection of PFOS and PFOA at MW342 as well as significant PFAS concentration increases, re-sampling of these locations was undertaken on 22 December 2021. Re-sampling results were generally consistent with the November 2021 results. The above concentrations reported for MW307 and MW342 are from November 2021.

4.3 Surface water

4.3.1 Summary of Field Observations

4.3.1.1 Water quality parameter field measurements

Stabilised water quality parameter field measurements, water colour and turbidity observations recorded during the surface water sampling program are presented in field sampling record sheets, included in Appendix D. Surface water varied from clear to brown with low to high turbidity. During the DSI investigation a large number of on-base locations were unable to be sampled due to being dry. These locations that were included in the OMP (excluding SW302) had water observed in them for the first time.

4.3.2 Surface Water Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, presented in Table B2, Appendix B, and summarised in Table 4-3 below. Of the 52 primary samples that were tested, PFOA was reported above the limit of detection in 28 samples, and Sum of PFHxS and PFOS in 46 samples.

Table 4-3 Summary of Surface Water Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR[3]	No. Results Above Drinking Water Criteria[3]	Significant Concentration Changes[4]
PFOS	SW307, SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW387, SW388, SW395, SW396, SW397, SW400, SW401, SW403, SW405, SW409, SW412, SW424, SW427, SW430, SW431, SW432, SW434, SW448, SW462, SW463, SW470, SW471, SW487	0.00023[2]	7.99	46	-	SW434 (increase) SW332, SW382 (decrease)
PFOA	-	0.56[1]	0.38	28	0	-
Sum of PFHxS and PFOS	SW307, SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW333, SW336, SW338, SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW387, SW388, SW395, SW396, SW397, SW400, SW401, SW403, SW405, SW424, SW427, SW430, SW431, SW432, SW448, SW462, SW463, SW470, SW471, SW487	0.07[1]	10.10	46	42	SW434 (increase) SW332, SW382 (decrease)

Note:
1. Drinking water assessment criteria.
2. Ecological assessment criteria.
3. Non-inclusive of quality control samples.
4. Significant concentration change defined as an order of magnitude increase or decrease.

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- SW332: Sum of PFHxS and PFOS has decreased by two orders of magnitude from 4.45 µg/L in November 2017 to 0.04 µg/L in this event.
- SW382: Sum of PFHxS and PFOS has decreased by one order of magnitude from 0.13 µg/L in November 2017 to below LOR in this event.
- SW434: Sum of PFHxS and PFOS has increased by one of magnitude from 0.0045 µg/L in November 2017 to 0.07 µg/L in this event.

Table 4-4 Summary of Surface Water Results with First-time Detections or Exceedances

Deviation Type	Monitoring Well	Sum of PFHxS + PFOS concentration (µg/L)		PFOA concentration (µg/L)		PFOS concentration (µg/L)	
		November 2021	Previous Maximum	November 2021	Previous Maximum	November 2021	Previous Maximum
First-time detections	SW307	**0.17**	-	<0.01	-	0.07	-
	SW310	**0.32**	-	<0.01	-	0.11	-

	SW311	**2.16**	-	0.03	-	1.75	-
	SW313	**4.43**	-	0.3	-	3.13	-
	SW321	**5.8**	-	0.09	-	3.48	-
	SW322	**4.48**	-	0.07	-	2.38	-
	SW326	**10.1**	-	0.03	-	7.99	-
	SW379	**0.58**	-	0.02	-	0.41	-
	SW380	**0.43**	-	<0.01	-	0.34	-
First-time exceedance of the NEMP (HEPA, 2020) drinking water guidelines	SW307	**0.17**	-	<0.01	-	0.07	-
	SW310	**0.32**	-	<0.01	-	0.11	-
	SW311	**2.16**	-	0.03	-	1.75	-
	SW313	**4.43**	-	0.3	-	3.13	-
	SW321	**5.8**	-	0.09	-	3.48	-
	SW322	**4.48**	-	0.07	-	2.38	-
	SW326	**10.1**	-	0.03	-	7.99	-
	SW379	**0.58**	-	0.02	-	0.41	-
	SW380	**0.43**	-	<0.01	-	0.34	-
	SW430	**0.16**	0.0618	<0.01	0.0039	0.1	0.0465

Note:
Location with first-time detection of PFOS + PFHxS or PFOA or PFOS in latest monitoring round
Location with a new exceedance of drinking water guideline values in latest monitoring round
Bold: Exceedance of drinking water guideline values
Exclusive of quality control samples.

Findings are summarised as follows:

- Nine sampling locations (SW307, SW310, SW311, SW313, SW321, SW322, SW326, SW379, SW380) reported first-time detections of PFOS and Sum of PFHxS and PFOS. This is the first time these locations were sampled.
- Six sampling locations (SW311, SW313, SW321, SW322, SW326, SW379) reported first-time detections of PFOA. This is the first time these locations were sampled.
- Ten sampling locations (SW307, SW310, SW311, SW313, SW321, SW322, SW326, SW379, SW380, SW430) reported a first-time exceedance of the Drinking Water criteria for Sum of PFHxS and PFOS.

4.4 Data Validation

The data validation process has concluded that there are no significant systematic errors in the data collection process. Therefore, the data set used as the basis for the surface water and groundwater assessment is considered valid and complete. A detailed Data Quality Review is included in Appendix E.

5 Summary and Conclusions

Cardno conducted the November 2021 biannual groundwater and surface water monitoring event at Bandiana Military Area as part of the PFAS OMP. On-site and off-site sampling and testing was undertaken at 42 groundwater monitoring wells and 52 surface water locations.

Groundwater levels were gauged in all accessible wells before sampling. Groundwater was interpreted to flow in a south-westerly direction from South Bandiana towards Jack in the Box Creek, easterly direction from North Bandiana and East Bandiana towards the Kiewa River.

The results of the November 2021 monitoring event do not indicate any changes in the risk profile associated with Defence's historical use of AFFF since the DSI investigation (Golder, 2018). The increases at MW307 and MW342 should be closely monitored in future for any trends. If trends are confirmed then there may well be a change in risk profile.

Table 5-1 Summary of Results

Activity	Details
Deviations from OMP SAQP	> 2 groundwater wells were not sampled due to the well being dry. > 1 groundwater wells were sampled from tap connected to the pump due to there being no direct monitoring well access. > 4 groundwater wells were sampled using bailers instead of HydraSleeves® due to there being insufficient water in the wells. > 1 surface water sampling location was not sampled due to the location being dry. > 2 groundwater wells were resampled in December 2021 due to inconsistent results compared to the DSI investigation.
Groundwater Analytical Results	> 42 groundwater samples were collected in total. > 21 samples reported PFOA concentrations above the limit of reporting. > 34 samples reported Sum of PFHxS and PFOS concentrations above the limit of reporting. > 6 samples reported PFOA concentrations above the adopted assessment criteria. > 31 samples reported Sum of PFHxS and PFOS concentrations above the adopted assessment criteria. > One sample reported a first-time detection of PFOA. > No samples reported a first-time detection of Sum of PFHxS and PFOS. > Two samples reported a first-time detection of PFOS. > One sample reported a first-time exceedance of the Drinking Water assessment criteria for PFOA > Two samples reported a first-time exceedance of Drinking Water assessment criteria for Sum of PFHxS and PFOS.
Surface Water Analytical Results	> 52 surface water samples were collected in total. > 28 samples reported PFOA concentrations above the limit of reporting. > 46 samples reported Sum of PFHxS and PFOS concentrations above the limit of reporting. > No samples reported PFOA concentrations above the Drinking Water assessment criteria. > 42 samples reported Sum of PFHxS and PFOS concentrations above the Drinking Water assessment criteria. > 9 samples reported a first-time detection of PFOS and Sum of PFHxS and PFOS. > 6 samples reported a first-time detection of PFOA. > 10 samples reported a first-time exceedance of the Drinking Water assessment criteria for Sum of PFHxS and PFOS. > No samples reported a first-time exceedance of the Drinking Water assessment criteria for PFOA.
Next Scheduled Monitoring Event	> The next OMP monitoring event is scheduled for May 2022.

Activity	Details
	> OMP to be reviewed by the Lead Consultant to assess potential change in the risk profile associated with increased PFAS concentrations in wells MW307 and MW342. > SAQP to be reviewed and updated as required prior to the next monitoring event.

6 References

General References

1. ANZECC and ARMCANZ (2000), Australian Water Quality Guidelines for Fresh and Marine Water Quality.
2. Defence (2019), Defence Contamination management Manual (DCMM).
3. Defence (2021), PFAS OMP Factual Report Guidance, Version 0.2, May 2021.
4. Environmental Protection Agency (United States EPA; 2002), EPA/240/R-02/004 Guidance on Environmental Data Verification and Data Validation, November 2002.
5. The Heads of EPAs Australia and New Zealand (HEPA; 2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020.
6. National Environment Protection Council (NEPC; 2013), National Environmental Protection (Assessment of Site Contamination) Measure (as amended), registered May 2013.
7. National Health and Medical Research Council (2011 – updated 2018), National Water Quality Management Strategy Australian Drinking Water Guidelines, 6 August 2018.
8. Nation Health and Medical Research Council (NHMRC; 2019), Guidance on Per and Poly-fluoroalkyl Substances (PFAS) in Recreational Water, August 2019.
9. Standards Australia/Standards New Zealand (1998), AS5667.1:1998 Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.
10. Standards Australia (1999), AS4482.2-1999 Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 – Non-volatile and semi-volatile compounds.
11. USEPA (2000), Guidance for the Data Quality Objectives Process, EPA QA/G-4, U.S. Environmental Protection Agency.
12. USEPA (2002), Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8, U.S. Environmental Protection Agency.

Site Specific References

13. Cardno (2021), PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area, Rev 1, 22 October 2021.
14. Golder (2018), Detailed Site Investigation – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations, 14 June 2018 (reference 1777738-081-R-RevB).
15. Golder (2020), Human Health and Ecological Risk Assessment – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations, November 2020 (reference 1777738-150-R-RevB).
16. Golder (2020a), PFAS Management Area Plan – Bandiana Military Area, November 2018 (reference 1777738-153-R-RevA-PMAP,Final,November2020)

APPENDIX A

FIGURES

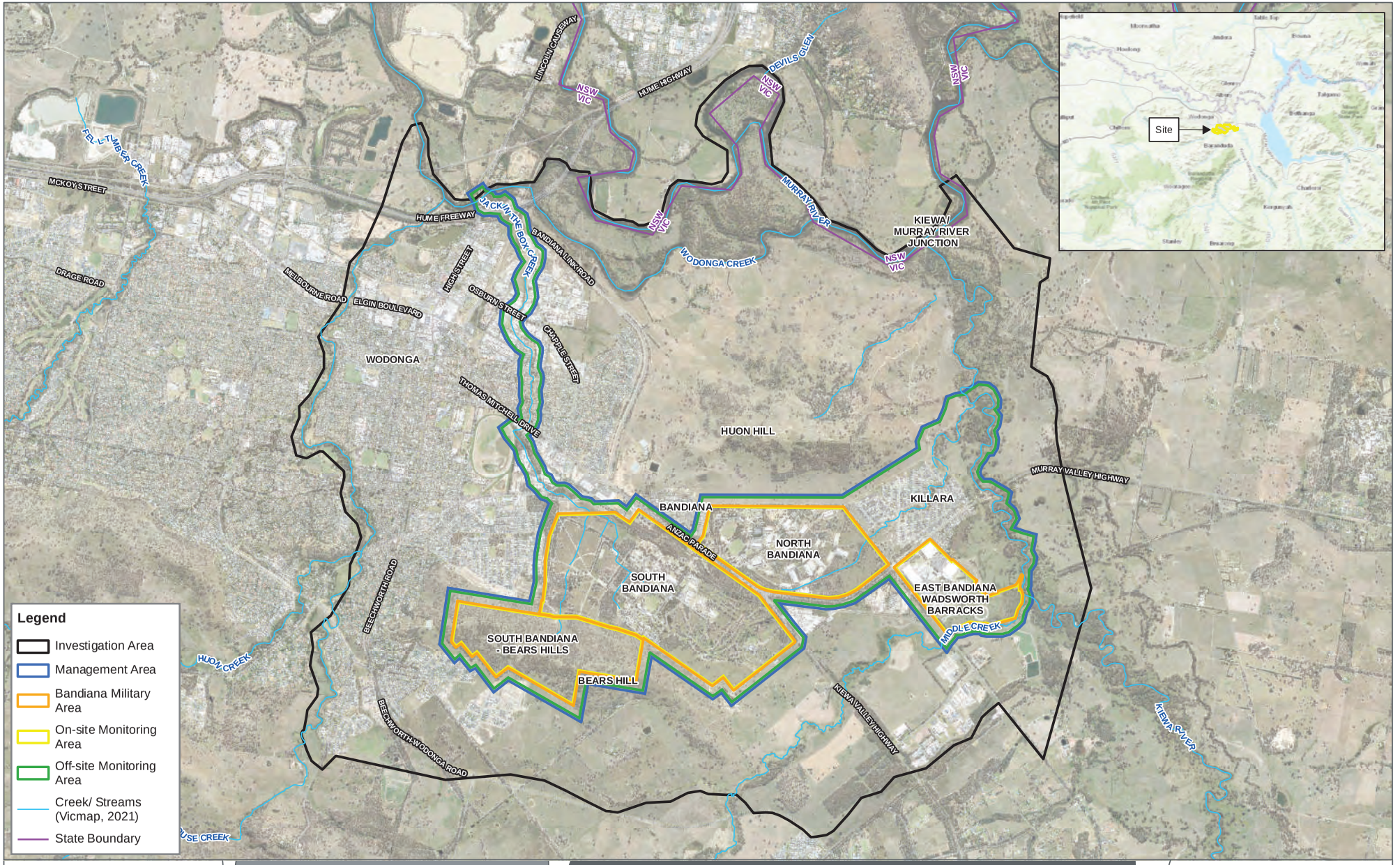


FIGURE 1

1:38,000 Scale at A3

Metres

0 1,000 2,000

Site Locality Plan

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno

Map Produced by Cardno VIC
Date: 2022-01-14 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0150-SiteLocalityPlan_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

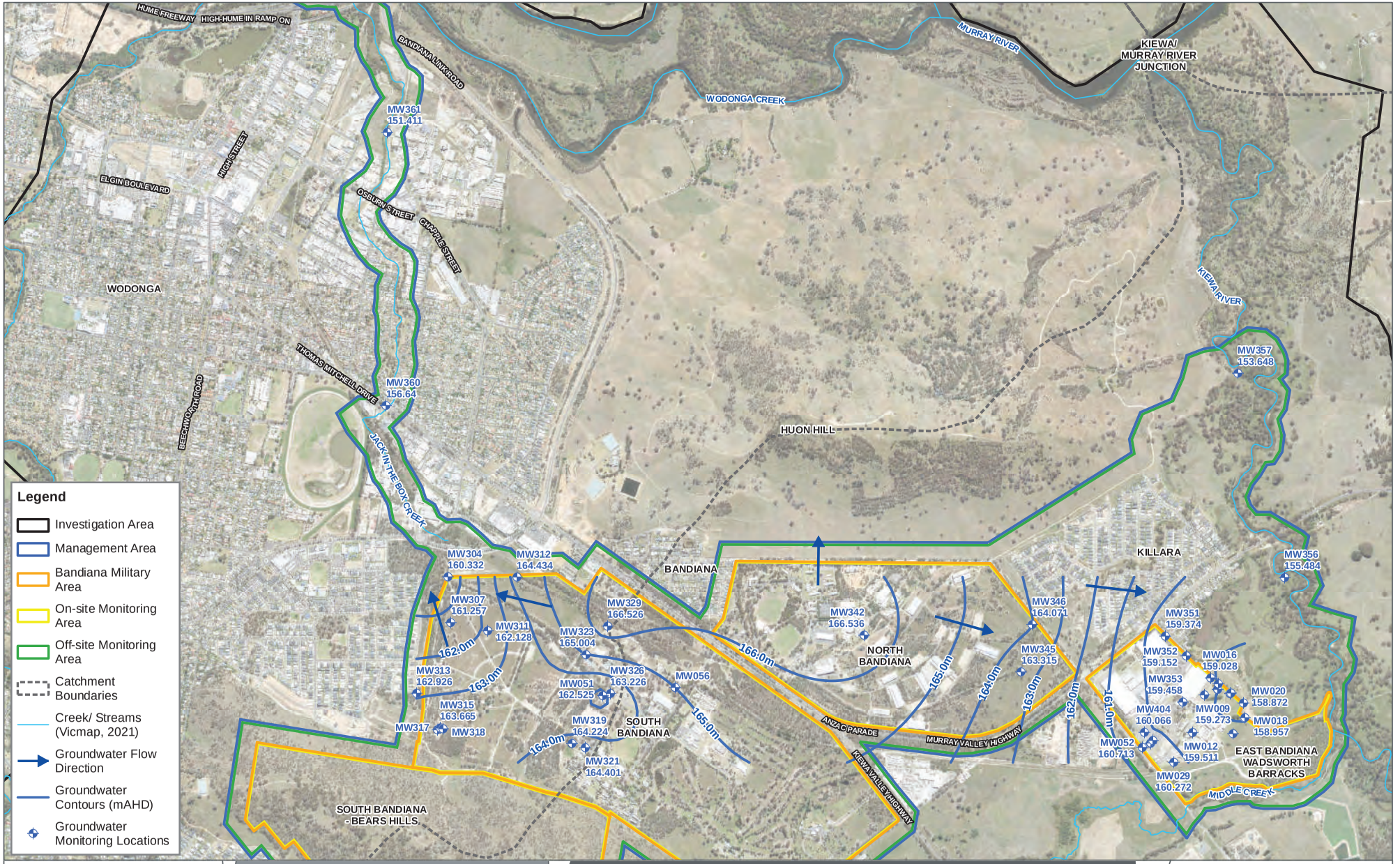


FIGURE 2

1:20,000 Scale at A3

Metres

0 500 1,000

Groundwater Elevation Contours (November, 2021)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno

Map Produced by Cardno VIC
Date: 2022-01-14 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0193-GW_ElevContours_RegionalA_B.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

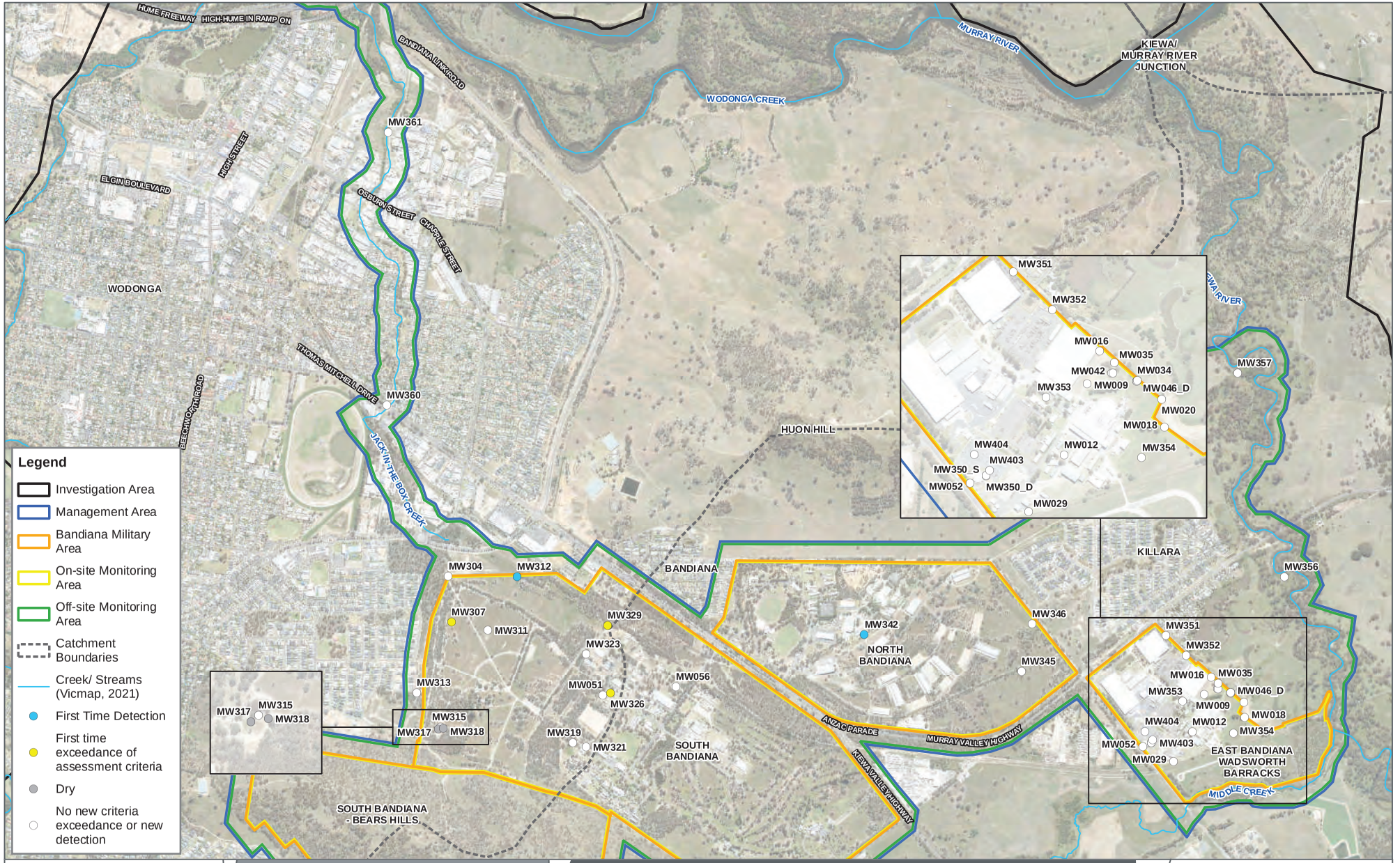


FIGURE 3

1:20,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Groundwater (November, 2021)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno

Map Produced by Cardno VIC
Date: 2022-03-29 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0194-GW_ConcNotification_B.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

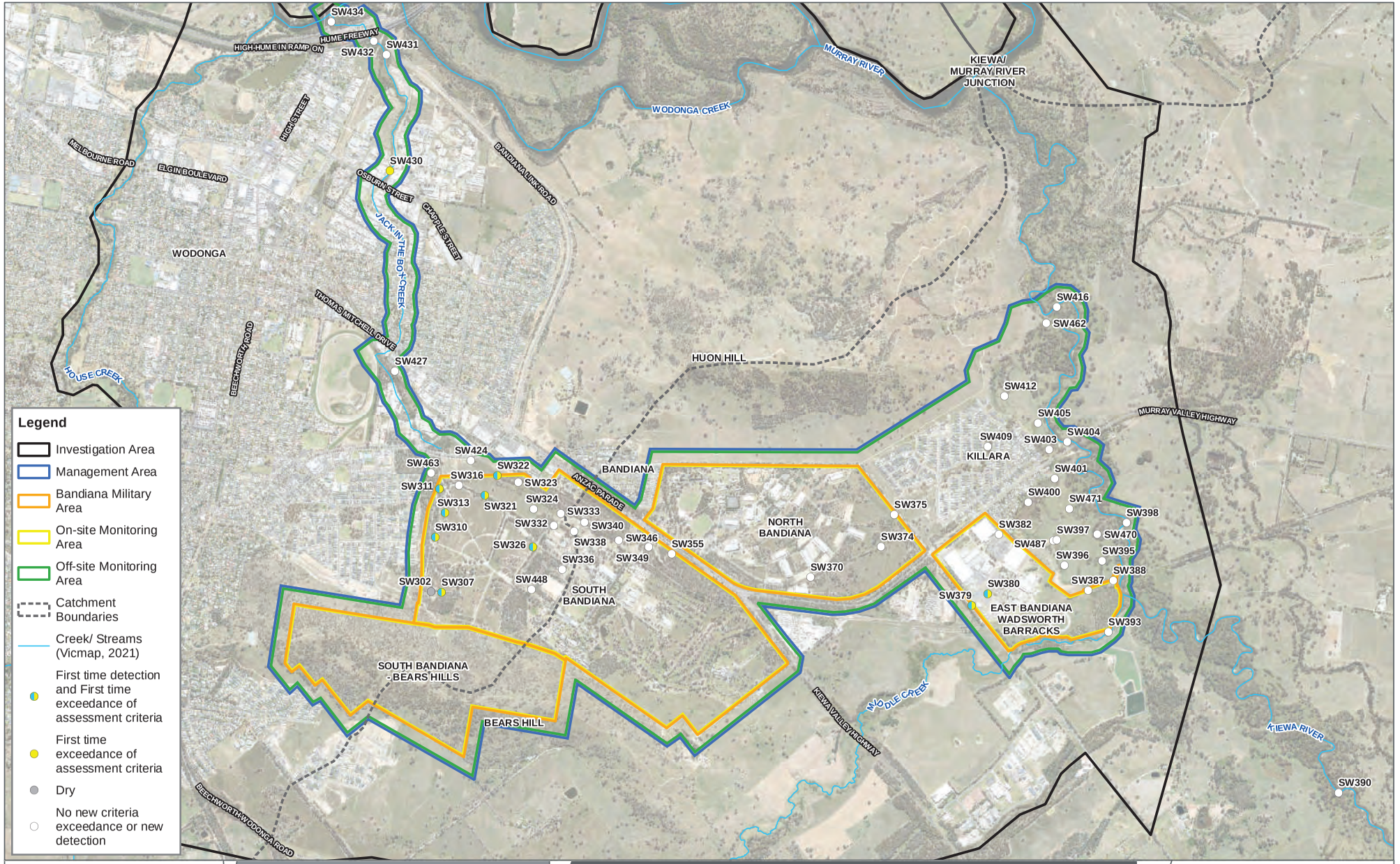


FIGURE 4

1:26,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Surface Water (November, 2021)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno

Map Produced by Cardno VIC
Date: 2022-01-14 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0195-SWConcNotification_B.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

APPENDIX

B

DATA ASSESSMENT TABLES

												Perfluorocarbons								
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**													
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*													
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220														
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19														
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**																
MW009	On-base	28/11/2017	0445E MW09 S 171128	Normal	ES1730397	3.32	0.45	***9.92***	1.28	1.4	6.6	0.3	<0.02	0.3	0.4	1.85	0.29	<0.02	<0.02	<0.02	<0.02
MW009	On-base	16/11/2021	0445 MW009 211116	Normal	EM2122998	2.67	0.43	***6.81***	0.95	0.86	4.14	0.45	<0.02	0.2	0.34	1.36	0.25	<0.02	<0.02	<0.02	<0.02
MW012	On-base	28/11/2017	0445E MW12 S 171128	Normal	ES1730397	0.04	<0.01	**0.3**	<0.02	<0.02	0.26	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW012	On-base	28/11/2017	0445E QC100 171128	Field D	ES1730397	0.05	<0.01	**0.37**	<0.02	<0.02	0.32	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW012	On-base	12/11/2021	0445 MW012 211111	Normal	EM2122518	0.07	<0.01	**0.43**	<0.02	<0.02	0.36	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW016	On-base	28/11/2017	0445E MW16 S 171128	Normal	ES1730397	7.35	0.39	***11.6***	0.62	0.66	4.22	0.32	<0.02	0.1	0.2	0.95	0.2	<0.02	<0.02	<0.02	<0.02
MW016	On-base	16/11/2021	0445 MW016 211116	Normal	EM2122998	4.38	0.31	***7.42***	0.4	0.4	3.04	0.25	<0.02	<0.1	0.16	0.68	0.15	<0.02	<0.02	<0.02	<0.02
MW018	On-base	28/11/2017	0445E MW18 S 171128	Normal	ES1730397	0.13	<0.01	**0.31**	0.02	<0.02	0.18	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW018	On-base	16/11/2021	0445 MW018 211116	Normal	EM2122998	0.32	<0.01	**0.67**	0.06	0.05	0.35	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW020	On-base	28/11/2017	0445E MW20 S 171128	Normal	ES1730397	0.72	0.05	***2.94***	0.11	0.14	1.62	0.05	<0.02	<0.1	0.03	0.19	<0.02	<0.02	<0.02	<0.02	<0.02
MW020	On-base	16/11/2021	0445 MW020 211116	Normal	EM2122998	1.54	0.07	***3.38***	0.15	0.16	1.84	0.09	<0.02	<0.1	0.05	0.23	0.03	<0.02	<0.02	<0.02	<0.02
MW029	On-base	11/12/2017	0445E MW29 S 171211	Normal	ES1731478	0.38	0.04	**0.87**	0.12	0.11	0.49	<0.02	<0.02	<0.1	0.19	0.22	0.06	<0.02	<0.02	<0.02	<0.02
MW029	On-base	11/11/2021	0445 MW029 211111	Normal	EM2122518	0.44	0.06	**1.15**	0.13	0.13	0.71	0.02	<0.02	<0.1	0.16	0.25	0.08	<0.02	<0.02	<0.02	<0.02
MW034	On-base	28/11/2017	0445E MW34 S 171128	Normal	ES1730397	0.73	0.06	**1.59**	0.1	0.12	0.86	0.02	<0.02	<0.1	0.04	0.13	0.02	<0.02	<0.02	<0.02	<0.02
MW034	On-base	16/11/2021	0445 MW034 211116	Normal	EM2122998	1.86	0.12	***3.46***	0.26	0.21	1.6	0.13	<0.02	<0.1	0.09	0.34	0.06	<0.02	<0.02	<0.02	<0.02
MW035	On-base	28/11/2017	0445E MW35 S 171128	Normal	ES1730397	3.97	0.54	***12.1***	1.72	1.74	8.16	0.39	<0.02	0.4	0.55	2.4	0.41	<0.02	<0.02	<0.02	<0.02
MW035	On-base	16/11/2021	0445 MW035 211116	Normal	EM2122998	3.32	0.45	***7.45***	0.93	0.87	4.13	0.39	<0.02	0.2	0.34	1.41	0.26	<0.02	<0.02	<0.02	<0.02
MW042	On-base	28/11/2017	0445E MW42 D 171128	Normal	ES1730397	5.66	**0.7**	***15.4***	1.99	2.07	9.76	0.5	<0.02	0.4	0.64	2.88	0.47	<0.02	<0.02	<0.02	<0.02
MW042	On-base	11/11/2021	QC204 211111	Interlab D	841785	4.3	**0.65**	***11.3***	1.2	0.96	7	0.57	<0.01	0.33	0.36	1.9	0.32	<0.01	<0.01	<0.01	<0.01
MW042	On-base	12/11/2021	0445 MW042 211111	Normal	EM2122518	3.61	0.49	***8.66***	0.92	1.13	5.05	0.49	<0.02	0.2	0.35	1.62	0.31	<0.02	<0.02	<0.02	<0.02
MW042	On-base	12/11/2021	0445 QC104 211111	Field D	EM2122518	3.3	0.46	***8.79***	0.99	0.81	5.49	0.38	<0.04	<0.2	0.33	1.52	0.24	<0.04	<0.04	<0.04	<0.04
MW043	On-base	28/11/2017	0445E MW43 I 171128	Normal	ES1730397	10.5	**1.09**	***32***	3.11	3.28	21.5	0.88	<0.02	0.7	1.06	4.85	0.71	<0.02	<0.02	<0.02	<0.02
MW043	On-base	16/11/2021	0445 MW043 211116	Normal	EM2122998	5.33	**0.76**	***12.9***	1.6	1.73	7.54	0.81	<0.02	0.4	0.61	2.51	0.43	<0.02	<0.02	<0.02	<0.02
MW046 D	On-base	28/11/2017	0445E MW46 D 171128	Normal	ES1730397	2.05	0.14	***4.31***	0.34	0.36	2.26	0.14	<0.02	<0.1	0.12	0.49	0.08	<0.02	<0.02	<0.02	<0.02
MW046 D	On-base	16/11/2021	0445 MW046 D 211116	Normal	EM2122998	3.24	0.19	***5.5***	0.4	0.28	2.26	0.19	<0.02	<0.1	0.16	0.52	0.1	<0.02	<0.02	<0.02	<0.02
MW046 I	On-base	28/11/2017	0445E MW47 I 171128	Normal	ES1730397	1.99	0.16	***4.27***	0.32	0.35	2.28	0.14	<0.02	<0.1	0.12	0.5	0.08	<0.02	<0.02	<0.02	<0.02
MW046 I	On-base	16/11/2021	0445 MW046 I 211116	Normal	EM2122998	2.96	0.17	***5.26***	0.38	0.3	2.3	0.19	<0.02	<0.1	0.15	0.5	0.09	<0.02	<0.02	<0.02	<0.02
MW051	On-base	4/12/2017	0445S MW04 S 171204	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MW051	On-base	10/11/2021	QC200 211110	Interlab D	841785	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW051	On-base	11/11/2021	0445 MW051 211110	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW051	On-base	12/11/2021	0445 QC100 211110	Field D	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW052	On-base	1/06/2012	0445E MW06-A 120601	Normal	ES1213811	1.24	**0.94**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW052	On-base	1/06/2012	0445E QC103 120601	Field D	ES1213811	1.18	**0.91**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW052	On-base	7/03/2017	0445 MW06 070307	Normal	163195	6.6	**3.2**	-	-	-	53	-	-	-	-	-	-	-	-	-	-
MW052	On-base	11/12/2017	0445E MW06A S 171211	Normal	ES1731478	7.17	**1.37**	***26.5***	2.86	3.18	19.3	0.45	<0.02	0.6	1.24	4.23	0.98	<0.02	<0.02	<0.02	<0.02
MW052	On-base	16/11/2021	0445 MW052 211116	Normal	EM2122998	7.23	**0.67**	***11***	0.96	0.86	3.81	0.5	<0.02	0.3	0.39	1.6	0.36	<0.02	<0.02	<0.02	<0.02
MW056	On-base	29/11/2017	0445S BH111 P 171129	Normal	ES1730510	0.97	0.31	**1.71**	0.14	0.22	0.74	0.15	<0.02	<0.1	<0.02	0.23	0.11	<0.02	<0.02	<0.02	<0.02
MW056	On-base	11/11/2021	0445 MW056 211111	Normal	EM2122518	0.7	0.15	**1.5**	0.18	0.19	0.8	0.07	<0.02	<0.1	0.02	0.14	0.07	<0.02	<0.02	<0.02	<0.02
MW304	On-base	6/12/2017	0445s MW304 S 171206	Normal	ES1731108	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW304	On-base	10/11/2021	0445 MW304 211110	Normal	EM2122518	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW307	On-base	6/12/2017	0445s MW307 S 171206	Normal	ES1731108	0.25	0.01	**0.37**	0.02	<0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
MW307	On-base	6/12/2017	0445s QC110 171206	Field D	ES1731108	0.25	0.01	**0.35**	<0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
MW307	On-base	11/11/2021	0445 MW307 211110	Normal	EM2122518	70.4	***34.2***	***422***	87.7	61.2	352	28.4	<0.04	7.1	57.5	140	23	0.48	<0.04	<0.04	<0.04
MW307	On-base	22/12/2021	0445 MW307 211222	Normal	EM2125903	94.3	***44.2***	***590***	107	97.6	496	41.2	<0.05	13.4	71.3	170	31.5	0.6	<0.05	<0.05	<0.05
MW307	On-base	22/12/2021	0445 QC101 211222	Field D	EM2125903	91	***44.8***	***577***	110	85.9	486	38.6	<0.05	12.4	71	168	32.1	0.6	<0.05	<0.05	<0.05
MW307	On-base	22/12/2021	0445 QC201 211222	Interlab D	852797	66	**8.9**	***456***	68	74	390	27	<0.01	4.5	16	39	9.5	0.15	<0.01	<0.01	<0.01
MW311	On-base	5/12/2017	0445S MW311 S 171205	Normal	ES1731167	0.02	<0.01	**0.09**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW311	On-base	5/12/2017	0445S QC108 171205	Field D	ES1731167	0.02	<0.01	**0.09**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW311	On-base	17/11/2021	0445 MW311 211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW312	On-base	6/12/2017	0445s MW312 S 171206	Normal	ES1731108	<0.01	<0.01	**0.12**	0.02	0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
MW312	On-base	10/11/2021	0445 MW312 21110	Normal	EM2122518	0.02	<0.01	**0.16**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
MW313	Off-base	9/12/2017	0445 MW313 D 171209	Normal	ES1731468	0.0039	<0.0005	0.0052	<0.0005	<0.0005	0.0013	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW313	Off-base	11/11/2021	0445 MW313 211111	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW315	On-base	6/12/2017	0445s MW315 D 171206	Normal	ES1731108	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW315	On-base	17/11/2021	0445 MW315 211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW317	On-base	6/12/2017	0445s MW317 D 171206	Normal	ES1731108	0.05	<0.01	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW319	On-base	4/12/2017	0445S MW319 D 171204	Normal	ES1731167	0.22	<0.01	**0.31**	0.03	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
MW319	On-base	10/11/2021	QC201 211110	Interlab D	841785	0.39	<0.01	**0.51**	0.01	<0.01	0.12	<0.01	<0.01	<0.05	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
MW319	On-base	10/11/2021	0445 MW319 211110	Normal	EM2122518	0.28	<0.01	**0.37**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW319	On-base	12/11/2021	0445 QC101 211110	Field D	EM2122518	0.31	<0.01	**0.39**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW321	On-base	5/12/2017	0445S MW321 S 171205	Normal	ES1731167	6.01	0.1	***7.65***	0.05	0.06	1.64	0.38	<0.02	<0.1	0.02	0.16	0.03	<0.02	<0.02	<0.02	<0.02
MW321	On-base	10/11/2021	0445 MW321 211110	Normal	EM2122518	0.73	<0.01	**0.92**	<0.02	<0.02	0.19	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

						Perfluorocarbons														
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**													
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*													
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220														
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19														
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**																
MW323	On-base	30/11/2017	0445S_MW323_S_171130	Normal	ES1730642	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW323	On-base	30/11/2017	0445S_QC104_S_171130	Field_D	ES1730642	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW323	On-base	5/12/2017	0445S_QC204_171130	Interlab_D	575864	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW323	On-base	10/11/2021	0445_MW323_211110	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW326	On-base	4/12/2017	0445S_MW326_S_171204	Normal	ES1731167	0.03	<0.01	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW326	On-base	10/11/2021	0445_MW326_211110	Normal	EM2122518	0.03	<0.01	**0.29**	0.46	0.11	0.26	<0.02	<0.02	<0.1	0.05	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
MW329	On-base	4/12/2017	0445S_MW329_S_171204	Normal	ES1731167	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW329	On-base	10/11/2021	QC202_211110	Interlab_D	841785	0.03	<0.01	**0.19**	0.04	0.03	0.16	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW329	On-base	10/11/2021	0445_MW329_21110	Normal	EM2122518	0.03	<0.01	**0.17**	0.04	0.03	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW329	On-base	10/11/2021	0445_QC102_211110	Field_D	EM2122518	0.03	<0.01	**0.17**	0.04	0.03	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	7/12/2017	0445N_MW342_S_171207	Normal	ES1731478	<0.01	<0.01	**0.09**	0.03	0.04	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	11/11/2021	0445_MW342_211111	Normal	EM2122518	9.21	0.22	***13.5***	0.88	0.53	4.31	0.36	<0.02	<0.1	0.24	0.95	0.08	<0.02	<0.02	<0.02	<0.02
MW342	On-base	22/12/2021	0445_MW342_211222	Normal	EM2125903	4.15	0.2	***9.15***	0.94	0.78	5	0.36	<0.02	0.1	0.24	1.1	0.08	<0.02	<0.02	<0.02	<0.02
MW342	On-base	22/12/2021	0445_QC100_211222	Field_D	EM2125903	4.37	0.21	***9.48***	0.89	0.7	5.11	0.37	<0.02	0.1	0.24	1.13	0.07	<0.02	<0.02	<0.02	<0.02
MW342	On-base	22/12/2021	0445_QC200_211222	Interlab_D	852797	5.8	0.32	***12.6***	1.1	1	6.8	0.41	<0.01	0.2	0.3	1.4	0.09	<0.01	<0.01	<0.01	<0.01
MW345	On-base	7/12/2017	0445N_MW345_S_171207	Normal	ES1731478	0.1	<0.01	**0.3**	<0.02	0.03	0.2	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW345	On-base	17/11/2021	0445_MW345_211117	Normal	EM2122998	0.02	<0.01	**0.25**	0.06	0.05	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW346	On-base	7/12/2017	0445N_QC212_171207	Normal	577514	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW346	On-base	7/12/2017	0445N_MW346_S_171207	Normal	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW346	On-base	11/12/2017	0445N_QC112_171207	Field_D	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW346	On-base	16/11/2021	0445_MW346_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_D	On-base	10/12/2017	0445E_MW350_D_171210	Normal	ES1731478	0.27	0.02	**0.63**	<0.02	0.06	0.36	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_D	On-base	11/11/2021	0445_MW350_D_211111	Normal	EM2122518	0.33	0.02	**0.6**	0.04	0.03	0.27	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_S	On-base	10/12/2017	0445E_MW350_S_171210	Normal	ES1731478	15.2	**4.24**	***90.2***	7.42	10.4	75	2.02	<0.02	1.9	4.72	14	1.87	<0.02	<0.02	<0.02	<0.02
MW350_S	On-base	11/11/2021	QC205_211111	Interlab_D	841785	19	**2.8**	***69***	4	5	50	2.8	<0.01	0.95	1.3	7	1.1	<0.01	<0.01	<0.01	<0.01
MW350_S	On-base	11/11/2021	0445_MW350_S_211111	Normal	EM2122518	15.3	**3.05**	***48.7***	3.62	2.6	33.4	2.86	<0.04	0.6	1.39	5.72	1.16	<0.04	<0.04	<0.04	<0.04
MW350_S	On-base	11/11/2021	0445_QC105_211111	Field_D	EM2122518	15.2	**3.06**	***48.9***	3.65	2.7	33.7	2.91	<0.04	0.9	1.45	5.86	1.24	<0.04	<0.04	<0.04	<0.04
MW351	On-base	11/12/2017	0445E_MW351_S_171211	Normal	ES1731478	0.03	<0.01	**0.07**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW351	On-base	16/11/2021	0445_MW351_211116	Normal	EM2122998	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW352	On-base	11/12/2017	0445E_MW352_S_171211	Normal	ES1731478	0.02	<0.01	**0.1**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW352	On-base	16/11/2021	0445_MW352_211116	Normal	EM2122998	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW353	On-base	11/12/2017	0445E_MW353_S_171211	Normal	ES1731478	3.14	0.32	***8.98***	0.7	0.76	5.84	0.27	<0.02	<0.1	0.26	0.86	0.14	<0.02	<0.02	<0.02	<0.02
MW353	On-base	12/11/2021	0445_MW353_211111	Normal	EM2122518	3.85	0.22	***7.05***	0.46	0.43	3.2	0.26	<0.02	<0.1	0.13	0.53	0.11	<0.02	<0.02	<0.02	<0.02
MW354	On-base	11/12/2017	0445E_MW354_S_171211	Normal	ES1731478	0.03	<0.01	**0.17**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW354	On-base	11/12/2017	0445E_QC116_171211	Field_D	ES1731478	0.1	0.01	**0.27**	0.03	0.04	0.17	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
MW354	On-base	16/11/2021	0445_MW354_211116	Normal	EM2122998	0.15	0.01	**0.38**	0.04	0.03	0.23	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
MW356	Off-base	9/12/2017	0445_MW356_S_171209	Normal	ES1731468	0.0009	<0.0005	0.0019	<0.0005	<0.0005	0.001	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW356	Off-base	12/11/2021	0445_MW356_211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW357	Off-base	9/12/2017	0445_MW357_S_171209	Normal	ES1731468	0.0262	0.0011	**0.111**	0.0082	0.0089	0.0844	0.0018	<0.0005	<0.002	0.001	0.004	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
MW357	Off-base	9/12/2017	0445_QC114_171209	Field_D	ES1731468	0.0254	0.0011	**0.104**	0.0064	0.0097	0.0788	0.0018	<0.0005	<0.002	0.0006	0.0025	0.0008	<0.0005	<0.0005	<0.0005	<0.0005
MW357	Off-base	12/11/2021	0445_MW357_211112	Normal	EM2122519	0.03	<0.01	**0.07**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW360	Off-base	9/12/2017	0445_MW360_S_171209	Normal	ES1731468	0.0836	0.0009	**0.232**	0.0087	0.0173	0.148	0.0048	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW360	Off-base	11/11/2021	0445_MW360_211111	Normal	EM2122519	0.06	<0.01	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW361	Off-base	9/12/2017	0445_MW361_S_171209	Normal	ES1731468	0.0488	0.0098	**0.296**	0.011	0.0166	0.247	0.0053	<0.0005	<0.002	0.0155	0.0199	0.0096	<0.0005	<0.0005	<0.0005	<0.0005
MW361	Off-base	9/12/2017	0445_QC115_171209	Field_D	ES1731468	0.0454	0.0099	**0.282**	0.0094	0.0141	0.237	0.005	<0.0005	<0.002	0.0072	0.0206	0.0093	<0.0005	<0.0005	<0.0005	<0.0005
MW361	Off-base	11/11/2021	0445_MW361_211111	Normal	EM2122519	0.08	0.01	**0.21**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW403	On-base	10/12/2017	0445E_BH01_S_171210	Normal	ES1731478	39.4	**3.38**	***96.2***	8.93	9.2	56.8	2.65	<0.02	2.2	4.94	14.7	1.87	0.06	<0.02	<0.02	<0.02
MW403	On-base	12/11/2021	0445_MW403_211111	Normal	EM2122518	52.3	**4.41**	***93.9***	5.04	5.46	41.6	3.48	<0.04	1.1	2.23	9.86	1.69	0.05	<0.04	<0.04	<0.04
MW404	On-base	10/12/2017	0445E_BH02_S_171210	Normal	ES1731478	65.7	**6.8**	***118***	9.63	10	52.4	4.29	<0.02	1.9	5.15	12.3	3.38	0.03	<0.02	<0.02	<0.02
MW404	On-base	11/11/2021	QC203_211111	Interlab_D	841785	47	**3.4**	***84***	4.7	4.6	37	1.7	<0.01	0.96	1.4	6.9	1.6	0.02	<0.01	<0.01	<0.01
MW404	On-base	11/11/2021	0445_QC103_211111	Field_D	EM2122518	40.9	**3.96**	***69.3***	5.33	2.88	28.4	2.75	<0.04	1.1	1.74	7.32	1.86	<0.04	<0.04	<0.04	<0.04
MW404	On-base	11/11/2021	0445_MW404_211111	Normal	EM2122518	50.2	**3.86**	***81.1***	5.2	3.16	30.9	2.81	<0.04	0.8	1.66	7.59	1.73	<0.04	<0.04	<0.04	<0.04
OTH019	Off-base	31/10/2018	0445_QC220_181031	Interlab_D	625560	0.037	0.004	**0.157**	0.01	0.009	0.12	0.004	<0.001	<0.005	<0.001	0.005	<0.001	<0.001	<0.001	<0.001	<0.001
OTH019	Off-base	31/10/2018	0445_OTH019_181031	Normal	ES1832670	0.037	0.0053	**0.171**	0.0095	0.0102	0.134	0.0054	<0.0005	<0.002	<0.0005	0.0056	0.0011	<0.0005	<0.0005	<0.0005	<0.0005
OTH019	Off-base	31/10/2018	0445_QC120_181031	Field_D	ES1832670	0.0375	0.0058	**0.178**	0.01	0.0105	0.141	0.0056	<0.0005	<0.002	<0.0005	0.0054	0.0011	<0.0005	<0.0005	<0.0005	<0.0005
OTH019	Off-base	15/11/2021	0445_OTH019_211115	Normal	EM2122969	0.05	<0.01	**0.18**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

						Perfluorocarbons														
						Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																				
PFAS NEMP 2.0 Table 1 Health Recreational Water																				
PFAS NEMP 2.0 Table 5 Freshwater 95%																				
PFAS NEMP 2.0 Table 5 Freshwater 99%																				
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**															
MW009	On-base	28/11/2017	0445E MW09 S 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.2	-
MW009	On-base	16/11/2021	0445 MW009 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.6	-
MW012	On-base	28/11/2017	0445E MW12 S 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.3	-
MW012	On-base	28/11/2017	0445E QC100 171128	Field_D	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37	-
MW012	On-base	12/11/2021	0445 MW012 211111	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.43	-
MW016	On-base	28/11/2017	0445E MW16 S 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15	-
MW016	On-base	16/11/2021	0445 MW016 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.77	-
MW018	On-base	28/11/2017	0445E MW18 S 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-
MW018	On-base	16/11/2021	0445 MW018 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	-
MW020	On-base	28/11/2017	0445E MW20 S 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.91	-
MW020	On-base	16/11/2021	0445 MW020 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.16	-
MW029	On-base	11/12/2017	0445E MW29 S 171211	Normal	ES1731478	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.61	-
MW029	On-base	11/11/2021	0445 MW029 211111	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.98	-
MW034	On-base	28/11/2017	0445E MW34 S 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.08	-
MW034	On-base	16/11/2021	0445 MW034 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.67	-
MW035	On-base	28/11/2017	0445E MW35 S 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	20.4	-
MW035	On-base	16/11/2021	0445 MW035 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3	-
MW042	On-base	28/11/2017	0445E MW42 D 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	25.3	-
MW042	On-base	11/11/2021	QC204 211111	Interlab_D	841785	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	0.09	<0.01	<0.01	18.21	0.01195
MW042	On-base	12/11/2021	0445 MW042 211111	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	14.2	-
MW042	On-base	12/11/2021	0445 QC104 211111	Field_D	EM2122518	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09	<0.09	<0.04	<0.04	<0.05	0.05	<0.05	<0.05	13.6	-
MW043	On-base	28/11/2017	0445E MW43 I 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.46	<0.05	<0.05	48.1	-
MW043	On-base	16/11/2021	0445 MW043 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	21.9	-
MW046_D	On-base	28/11/2017	0445E MW46 D 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	6.08	-
MW046_D	On-base	16/11/2021	0445 MW046 D 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.11	<0.05	<0.05	7.45	-
MW046_I	On-base	28/11/2017	0445E MW47 I 171128	Normal	ES1730397	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	6.04	-
MW046_I	On-base	16/11/2021	0445 MW046 I 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	7.13	-
MW051	On-base	4/12/2017	0445S MW04 S 171204	Normal	ES1731167	<0.05	<0.12	<0.05	<0.12	<0.00012	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	-
MW051	On-base	10/11/2021	QC200 211110	Interlab_D	841785	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.00001
MW051	On-base	11/11/2021	0445 MW051 211110	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW051	On-base	12/11/2021	0445 QC100 211110	Field_D	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW052	On-base	1/06/2012	0445E MW06-A 120601	Normal	ES1213811	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-
MW052	On-base	1/06/2012	0445E QC103 120601	Field_D	ES1213811	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-
MW052	On-base	7/03/2017	0445 MW06 070307	Normal	163195	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-
MW052	On-base	11/12/2017	0445E MW06A S 171211	Normal	ES1731478	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	41.4	-
MW052	On-base	16/11/2021	0445 MW052 211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.7	-
MW056	On-base	29/11/2017	0445S BH111 P 171129	Normal	ES1730510	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.87	-
MW056	On-base	11/11/2021	0445 MW056 211111	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.32	-
MW304	On-base	6/12/2017	0445s MW304 S 171206	Normal	ES1731108	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW304	On-base	10/11/2021	0445 MW304 211110	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW307	On-base	6/12/2017	0445s MW307 S 171206	Normal	ES1731108	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	-
MW307	On-base	6/12/2017	0445s QC110 171206	Field_D	ES1731108	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41	-
MW307	On-base	11/11/2021	0445 MW307 211110	Normal	EM2122518	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09	<0.09	<0.04	<0.04	0.9	65.4	<0.05	<0.05	928	-
MW307	On-base	22/12/2021	0445 MW307 211222	Normal	EM2125903	<0.05	<0.14	<0.05	<0.14	<0.00014	<0.14	<0.14	<0.05	<0.05	0.9	100	<0.05	<0.05	1270	-
MW307	On-base	22/12/2021	0445 QC101 211222	Field_D	EM2125903	<0.05	<0.13	<0.05	<0.13	<0.00013	<0.13	<0.13	<0.05	<0.05	0.91	102	<0.05	<0.05	1240	-
MW307	On-base	22/12/2021	0445 QC201 211222	Interlab_D	852797	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	0.33	26	<0.01	<0.01	774.38	0.4649
MW311	On-base	5/12/2017	0445S MW311 S 171205	Normal	ES1731167	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	-
MW311	On-base	5/12/2017	0445S QC108 171205	Field_D	ES1731167	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	-
MW311	On-base	17/11/2021	0445 MW311 211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW312	On-base	6/12/2017	0445s MW312 S 171206	Normal	ES1731108	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-
MW312	On-base	10/11/2021	0445 MW312 21110	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-
MW313	Off-base	9/12/2017	0445 MW313 D 171209	Normal	ES1731468	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0052	-
MW313	Off-base	11/11/2021	0445 MW313 211111	Normal	EM2122519	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW315	On-base	6/12/2017	0445s MW315 D 171206	Normal	ES1731108	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW315	On-base	17/11/2021	0445 MW315 211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW317	On-base	6/12/2017	0445s MW317 D 171206	Normal	ES1731108	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-
MW319	On-base	4/12/2017	0445S MW319 D 171204	Normal	ES1731167	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38	-
MW319	On-base	10/11/2021	QC201 211110	Interlab_D	841785	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.55	0.00051
MW319	On-base	10/11/2021	0445 MW319 211110	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37	-
MW319	On-base	12/11/2021	0445 QC101 211110	Field_D	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.39	-
MW321	On-base	5/12/2017	0445S MW321 S 171205	Normal	ES1731167	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.45	-
MW321	On-base	10/11/2021	0445 MW321 211110	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.96	-

							Perfluorocarbons													
							Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
							µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
						LOR	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																					
PFAS NEMP 2.0 Table 1 Health Recreational Water																					
PFAS NEMP 2.0 Table 5 Freshwater 95%																					
PFAS NEMP 2.0 Table 5 Freshwater 99%																					
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**																
MW323	On-base	30/11/2017	0445S_MW323_S_171130	Normal	ES1730642		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW323	On-base	30/11/2017	0445S_QC104_S_171130	Field_D	ES1730642		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW323	On-base	5/12/2017	0445S_QC204_171130	Interlab_D	575864		<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	-
MW323	On-base	10/11/2021	0445_MW323_211110	Normal	EM2122518		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW326	On-base	4/12/2017	0445S_MW326_S_171204	Normal	ES1731167		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-
MW326	On-base	10/11/2021	0445_MW326_211110	Normal	EM2122518		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.01	-
MW329	On-base	4/12/2017	0445S_MW329_S_171204	Normal	ES1731167		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW329	On-base	10/11/2021	QC202_211110	Interlab_D	841785		<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.28	0.00019
MW329	On-base	10/11/2021	0445_MW329_21110	Normal	EM2122518		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
MW329	On-base	10/11/2021	0445_QC102_211110	Field_D	EM2122518		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
MW342	On-base	7/12/2017	0445N_MW342_S_171207	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.2	-
MW342	On-base	11/11/2021	0445_MW342_211111	Normal	EM2122518		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.8	-
MW342	On-base	22/12/2021	0445_MW342_211222	Normal	EM2125903		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13	-
MW342	On-base	22/12/2021	0445_QC100_211222	Field_D	EM2125903		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.2	-
MW342	On-base	22/12/2021	0445_QC200_211222	Interlab_D	852797		<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	17.88	0.01292
MW345	On-base	7/12/2017	0445N_MW345_S_171207	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-
MW345	On-base	17/11/2021	0445_MW345_211117	Normal	EM2122998		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-
MW346	On-base	7/12/2017	0445N_QC212_171207	Normal	577514		<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	-
MW346	On-base	7/12/2017	0445N_MW346_S_171207	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW346	On-base	11/12/2017	0445N_QC112_171207	Field_D	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW346	On-base	16/11/2021	0445_MW346_211117	Normal	EM2122998		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW350_D	On-base	10/12/2017	0445E_MW350_D_171210	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.79	-
MW350_D	On-base	11/11/2021	0445_MW350_D_211111	Normal	EM2122518		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77	-
MW350_S	On-base	10/12/2017	0445E_MW350_S_171210	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.42	<0.05	<0.05	137	-
MW350_S	On-base	11/11/2021	QC205_211111	Interlab_D	841785		<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	0.43	<0.01	<0.01	95.78	0.0718
MW350_S	On-base	11/11/2021	0445_MW350_S_211111	Normal	EM2122518		<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09	<0.09	<0.04	<0.04	<0.05	0.37	<0.05	<0.05	70.1	-
MW350_S	On-base	11/11/2021	0445_QC105_211111	Field_D	EM2122518		<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09	<0.09	<0.04	<0.04	<0.05	0.29	<0.05	<0.05	71	-
MW351	On-base	11/12/2017	0445E_MW351_S_171211	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
MW351	On-base	16/11/2021	0445_MW351_211116	Normal	EM2122998		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW352	On-base	11/12/2017	0445E_MW352_S_171211	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
MW352	On-base	16/11/2021	0445_MW352_211116	Normal	EM2122998		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW353	On-base	11/12/2017	0445E_MW353_S_171211	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3	-
MW353	On-base	12/11/2021	0445_MW353_211111	Normal	EM2122518		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.19	-
MW354	On-base	11/12/2017	0445E_MW354_S_171211	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-
MW354	On-base	11/12/2017	0445E_QC116_171211	Field_D	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38	-
MW354	On-base	16/11/2021	0445_MW354_211116	Normal	EM2122998		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.5	-
MW356	Off-base	9/12/2017	0445_MW356_S_171209	Normal	ES1731468		<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0019	-
MW356	Off-base	12/11/2021	0445_MW356_211112	Normal	EM2122519		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW357	Off-base	9/12/2017	0445_MW357_S_171209	Normal	ES1731468		<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.136	-
MW357	Off-base	9/12/2017	0445_QC114_171209	Field_D	ES1731468		<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.127	-
MW357	Off-base	12/11/2021	0445_MW357_211112	Normal	EM2122519		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
MW360	Off-base	9/12/2017	0445_MW360_S_171209	Normal	ES1731468		<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.263	-
MW360	Off-base	11/11/2021	0445_MW360_211111	Normal	EM2122519		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
MW361	Off-base	9/12/2017	0445_MW361_S_171209	Normal	ES1731468		<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.386	-
MW361	Off-base	9/12/2017	0445_QC115_171209	Field_D	ES1731468		<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.36	-
MW361	Off-base	11/11/2021	0445_MW361_211111	Normal	EM2122519		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-
MW403	On-base	10/12/2017	0445E_BH01_S_171210	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	1.01	0.05	<0.05	145	-
MW403	On-base	12/11/2021	0445_MW403_211111	Normal	EM2122518		<0.04	<0.1	<0.04	<0.1	<0.0001	<0.1	<0.1	<0.04	<0.04	<0.05	1.41	<0.05	<0.05	129	-
MW404	On-base	10/12/2017	0445E_BH02_S_171210	Normal	ES1731478		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.12	<0.05	<0.05	172	-
MW404	On-base	11/11/2021	QC203_211111	Interlab_D	841785		<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	0.08	<0.01	<0.01	110.86	0.0874
MW404	On-base	11/11/2021	0445_QC103_211111	Field_D	EM2122518		<0.04	<0.11	<0.04	<0.11	<0.00011	<0.11	<0.11	<0.04	<0.04	<0.05	0.06	<0.05	<0.05	96.3	-
MW404	On-base	11/11/2021	0445_MW404_211111	Normal	EM2122518		<0.04	<0.1	<0.04	<0.1	<0.0001	<0.1	<0.1	<0.04	<0.04	<0.05	0.06	<0.05	<0.05	108	-
OTH019	Off-base	31/10/2018	0445_QC220_181031	Interlab_D	625560		<0.001	<0.001	0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.194	0.000161
OTH019	Off-base	31/10/2018	0445_OTH019_181031	Normal	ES1832670		<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.208	-
OTH019	Off-base	31/10/2018	0445_QC120_181031	Field_D	ES1832670		<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.217	-
OTH019	Off-base	15/11/2021	0445_OTH019_211115	Normal	EM2122969		<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18	-

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

											Perfluorocarbons									
								Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)
								µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
							LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water									**0.56**	**0.07**													
PFAS NEMP 2.0 Table 1 Health Recreational Water									*10*	*2*													
PFAS NEMP 2.0 Table 5 Freshwater 95%								0.13	220														
PFAS NEMP 2.0 Table 5 Freshwater 99%								0.00023	19														
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**																		
SW307	On-base	17/11/2021	0445_SW307_211117	Normal	EM2122998		0.07	<0.01	**0.17**	<0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW310	On-base	17/11/2021	0445_SW310_211117	Normal	EM2122998		**0.11**	<0.01	**0.32**	<0.02	<0.02	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW311	On-base	17/11/2021	0445_SW311_211117	Normal	EM2122998		1.75	0.03	***2.16***	0.03	0.02	0.41	0.03	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW313	On-base	17/11/2021	0445_QC211_211117	Interlab_D	842787		4.5	0.35	***6.1***	0.08	0.08	1.6	0.08	<0.01	0.23	0.32	0.53	0.12	0.18	0.01	<0.01	<0.01	<0.01
SW313	On-base	17/11/2021	0445_QC111_211117	Field_D	EM2122998		3.85	0.3	***5.13***	0.1	0.07	1.28	0.06	<0.02	0.1	0.33	0.48	0.11	0.19	<0.02	<0.02	<0.02	<0.02
SW313	On-base	17/11/2021	0445_SW313_211117	Normal	EM2122998		3.18	0.3	***4.43***	0.1	0.06	1.3	0.07	<0.02	0.1	0.31	0.44	0.11	0.18	<0.02	<0.02	<0.02	<0.02
SW316	On-base	17/10/2017	0445S_SW316_0.1_171017	Normal	ES1726190		0.722	0.014	**1.11**	0.0242	0.0306	0.388	0.0232	0.002	<0.002	0.008	0.0418	0.0062	<0.002	<0.002	<0.002	<0.002	<0.002
SW316	On-base	17/11/2021	0445_SW316_211117	Normal	EM2122998		0.52	0.02	**1.02**	0.04	0.03	0.5	0.02	<0.02	<0.1	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW321	On-base	17/11/2021	0445_QC212_211117	Interlab_D	842787		7.5	0.11	***10.3***	0.18	0.26	2.8	0.13	<0.01	0.06	0.06	0.45	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
SW321	On-base	17/11/2021	0445_SW321_211117	Normal	EM2122998		3.48	0.09	***5.8***	0.16	0.16	2.32	0.1	<0.02	<0.1	0.06	0.35	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
SW321	On-base	17/11/2021	0445_QC112_211117	Field_D	EM2122998		3.88	0.08	***6.24***	0.18	0.17	2.36	0.1	<0.02	<0.1	0.05	0.36	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
SW322	On-base	17/11/2021	0445_SW322_211117	Normal	EM2122998		2.38	0.07	***4.48***	0.16	0.16	2.1	0.08	<0.02	<0.1	0.05	0.31	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
SW323	On-base	17/10/2017	0445S_SW323_0.2_171017	Normal	ES1726190		1.13	0.0304	**1.42**	0.0212	0.0278	0.287	0.0212	0.0044	<0.002	0.024	0.0652	0.021	0.0094	0.0032	<0.002	<0.002	<0.002
SW323	On-base	17/11/2021	0445_SW323_211117	Normal	EM2122998		0.66	0.03	**0.94**	0.02	<0.02	0.28	<0.02	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW324	On-base	20/10/2017	0445S_SW324_0.1_171020	Normal	ES1726682		1.53	0.155	***2.03***	0.0759	0.13	0.496	0.0823	<0.0005	<0.002	0.114	0.139	0.0654	0.0372	0.0075	0.0022	<0.0005	<0.0005
SW324	On-base	17/11/2021	0445_QC210_211117	Interlab_D	842787		2.6	0.11	***3.6***	0.05	0.06	1	0.05	0.01	0.1	0.11	0.21	0.05	0.02	<0.01	<0.01	<0.01	<0.01
SW324	On-base	17/11/2021	0445_SW324_211117	Normal	EM2122998		1.86	0.1	***2.61***	0.06	0.05	0.75	0.04	<0.02	<0.1	0.1	0.17	0.05	0.02	<0.02	<0.02	<0.02	<0.02
SW324	On-base	17/11/2021	0445_QC110_211117	Field_D	EM2122998		1.61	0.08	***2.23***	0.06	0.04	0.62	0.03	<0.02	<0.1	0.1	0.15	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
SW326	On-base	17/11/2021	0445_SW326_211117	Normal	EM2122998		7.39	0.36	***10.1***	0.22	0.19	2.14	0.22	0.07	0.2	0.37	0.63	0.19	0.04	<0.02	<0.02	<0.02	<0.02
SW332	On-base	17/10/2017	0445S_SW332_0.05_171017	Normal	ES1726190		3.98	0.0496	***4.45***	0.149	0.0898	0.472	0.0436	0.0244	0.032	0.161	0.419	0.0302	<0.002	<0.002	<0.002	<0.002	<0.002
SW332	On-base	17/11/2021	0445_SW332_211117	Normal	EM2122998		0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW333	On-base	17/10/2017	0445S_SW333_0.05_171017	Normal	ES1726190		0.444	0.0136	**0.577**	0.0148	0.0162	0.133	0.009	<0.002	<0.002	0.0042	0.036	0.006	0.0028	<0.002	<0.002	<0.002	<0.002
SW333	On-base	17/11/2021	0445_SW333_211117	Normal	EM2122998		0.44	0.03	**0.84**	0.07	0.05	0.4	<0.02	<0.02	<0.1	0.07	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW336	On-base	18/10/2017	0445S_QC267_171018	Interlab_D	569078		48	**1.2**	***50.7***	0.22	0.34	2.7	0.4	0.009	0.32	0.75	2.8	0.44	0.47	0.34	0.058	0.011	
SW336	On-base	18/10/2017	0445S_QC167_171018	Field_D	ES1726433		17.6	**0.85**	***19.8***	0.172	0.288	2.18	0.298	0.0452	0.044	0.352	1.93	0.324	0.347	0.137	0.0148	<0.002	
SW336	On-base	18/10/2017	0445S_SW336_0.1_171018	Normal	ES1726433		17.2	**0.899**	***19.6***	0.178	0.306	2.45	0.31	0.0396	0.055	0.446	2.3	0.382	0.348	0.136	0.0128	<0.002	
SW336	On-base	15/11/2021	0445_SW336_211115	Normal	EM2122998		7.29	0.2	***7.71***	0.06	0.05	0.42	0.05	0.19	<0.1	0.1	0.26	0.1	0.15	0.16	0.1	0.02	
SW338	On-base	18/10/2017	0445S_SW338_0.2_171018	Normal	ES1726433		3.94	0.224	***5.28***	0.202	0.21	1.34	0.111	0.0042	0.024	0.179	0.806	0.0998	0.0276	0.0048	<0.002	<0.002	
SW338	On-base	10/11/2021	0445_SW338_211109	Normal	EM2122518		1.06	0.05	**1.31**	0.09	0.03	0.25	<0.02	<0.02	<0.1	0.04	0.16	0.02	<0.02	<0.02	<0.02	<0.02	
SW340	On-base	18/10/2017	0445S_SW340_0.03_171018	Normal	ES1726433		5.59	0.333	***6.8***	0.134	0.158	1.21	0.096	0.0332	0.039	0.258	0.488	0.236	0.0956	0.0496	0.0144	0.0024	
SW340	On-base	10/11/2021	0445_SW340_211109	Normal	EM2122518		4.2	0.15	***5.86***	0.26	0.21	1.66	0.11	<0.02	0.2	0.28	0.44	0.1	<0.02	<0.02	<0.02	<0.02	
SW346	On-base	12/10/2017	0445S_SW346_0.2_171013	Normal	ES1725991		1.42	0.0634	**1.95**	0.0841	0.0844	0.526	0.0294	<0.0005	<0.002	0.11	0.15	0.0496	0.0206	0.0068	0.0014	<0.0005	
SW346	On-base	17/11/2021	0445_SW346_211117	Normal	EM2122998		0.73	0.04	**0.94**	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.07	0.08	0.03	<0.02	<0.02	<0.02	<0.02	
SW349	On-base	12/10/2017	0445S_QC159_171012	Field_D	ES1725991		0.854	0.0616	**1.33**	0.112	0.0908	0.479	0.0227	<0.0005	<0.002	0.124	0.166	0.0475	0.0164	0.0033	0.0009	<0.0005	
SW349	On-base	13/10/2017	0445S_SW349_0.5_171013	Normal	ES1725991		0.95	0.0476	**1.51**	0.104	0.0845	0.56	0.0216	<0.0005	<0.002	0.112	0.15	0.0399	0.012	0.0026	0.0007	<0.0005	
SW349	On-base	15/11/2021	0445_QC206_211115	Interlab_D	842787		0.84	0.05	**1.06**	0.04	0.03	0.22	0.01	<0.01	0.08	0.07	0.1	0.03	0.01	<0.01	<0.01	<0.01	
SW349	On-base	16/11/2021	0445_QC106_211115	Field_D	EM2122998		0.55	0.04	**0.73**	0.05	0.02	0.18	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	
SW349	On-base	16/11/2021	0445_SW349_211115	Normal	EM2122998		0.61	0.04	**0.82**	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	
SW355	On-base	13/10/2017	0445S_SW355_0.5_171013	Normal	ES1725991		0.325	0.0133	**0.533**	0.143	0.0294	0.208	0.0065	<0.0005	<0.002	0.0279	0.042	0.0111	0.0039	0.0013	<0.0005	<0.0005	
SW355	On-base	16/11/2021	0445_QC107_211117	Field_D	EM2122998		0.21	0.02	**0.29**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	
SW355	On-base	17/11/2021	0445_QC207_211117	Interlab_D	842787		0.28	0.02	**0.39**	0.02	0.01	0.1	<0.01	<0.01	<0.05	0.03	0.04	0.01	<0.01	<0.01	<0.01	<0.01	
SW355	On-base	17/11/2021	0445_SW355_211117	Normal	EM2122998		0.22	0.01	**0.3**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	
SW370	On-base	23/10/2017	0445N_SW370_0.01_171023	Normal	ES1726698		0.166	0.0213	**0.326**	0.0255	0.0591	0.16	0.0121	<0.0005	0.018	0.0284	0.0307	0.0176	0.0069	0.0018	<0.0005	<0.0005	
SW370	On-base	17/11/2021	0445_SW370_211117	Normal	EM2122998		0.22	0.01	**0.3**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
SW374	On-base	23/10/2017	0445N_SW374_0.1_171023	Normal	ES1726698		0.201	0.0228	**0.34**	0.0293	0.0378	0.139	0.0108	<0.0005	<0.002	0.0294	0.0324	0.0156	0.0057	0.001	<0.0005	<0.0005	
SW374	On-base	17/11/2021	0445_SW374_211117	Normal	EM2122998		0.13	<0.01	**0.17**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
SW375	On-base	23/10/2017	0445N_QC228_171023	Interlab_D	569535		0.19	0.015	**0.29**	0.021	0.013	0.1	0.003	<0.001	0.019	0.035	0.039	0.012	0.003	0.001	<0.001	<0.001	
SW375	On-base	23/10/2017	0445N_QC128_171023	Field_D	ES1726698		0.166	0.019	**0.294**	0.0274	0.0267	0.128	0.0089	<0.0005	0.019	0.0232	0.0267	0.0156	0.0046	<0.0005	<0.0005	<0.0005	
SW375	On-base	23/10/2017	0445N_SW375_0.1_171023	Normal	ES1726698		0.15	0.0197	**0.27**	0.0227	0.0245	0.12	0.0092	<0.0005	0.015	0.0253	0.0317	0.0162	0.0046	0.0012	<0.0005	<0.0005	
SW375	On-base	1/08/2018	0445_QC205_180801	Interlab_D	611290		0.07	0.006	**0.101**	0.004	0.003	0.031	0.002	<0.001	0.006	0.005	0.012	0.005	0.001	<0.001	<0.001	<0.001	
SW375	On-base	1/08/2018	0445_QC105_180801	Field_D	ES1823003		0.0623	0.0075	**0.104**	0.0068	0.0038	0.0415	0.0019	<0.0005	<0.002	<0.0005	0.0089	0.0053	0.0014	<0.0005	<0.0005	<0.0005	
SW375	On-base	1/08/2018	0445_SW375_0.2_180801	Normal	ES1823003		0.0644	0.0074	**0.106**	0.0046	0.0029	0.0419	0.0016	<0.0005	<0.002	0.0025	0.0101	0.0076	0.0014	<0.0005	<0.0005	<0.0005	
SW375	On-base	17/11/2021	0445_SW375_211117	Normal	EM2122998		0.09	<0.01	**0.15**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
SW379	On-base	16/11/2021	0445_SW379_211116	Normal	EM2122998		0.41	0.02	**0.58**	0.15	0.04	0.17	<0.02	0.02	0.1	0.07	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	
SW380	On-base	10/11/2021	0445_SW380_211108	Normal	EM2122518		0.34	<0.01	**0.43**	0.06	0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	
SW382	On-base	24/10/2017	0445E_QC131_171024	Field_D	ES1726816		0.101	0.0039	**0.12**	0.0066	0.0043	0.0187	0.0026	<0.0005	<0.002	0.0064	0.0155	0.0028	0.0008	0.0013	<0.0005	<0.0005	
SW382	On-base	24/10/2017	0445E_SW382_0.1_171024	Normal	ES1726816		0.107	0.0042	**0.13**	0.0074	0.0046	0.0225	0.0026	<0.0005	<0.002	0.0061	0.0157	0.0028	0.0008	0.0013	<0.0005	<0.0005	
SW382	On-base	16/11/2021	0445_QC209_211116	Interlab_D	842787		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
SW382	On-base	16/11/2021	0445_QC109_211116	Field_D	EM2122998		<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
SW382	On-base	17/11/2021	0445_SW382_211116	Normal	EM2122998		<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
SW387	On-base	25/10/2017	0445E_SW387_0.2_171025	Normal	ES1726955		0.053	0.0038	**0.157**	0.0273	0.0157	0.104	0.0045	<0.0005	<0.002	0.003	0.0074	0.0021	0.0005	0.0006	<0.0005	<0.0005	
SW387	On-base	16/11/2021	0445_SW387_211116	Normal	EM2122998		0.06	<0.01	**0.21**	0.03	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	

						Perfluorocarbons													
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**													
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*													
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220														
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19														
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**																
SW388	On-base	25/10/2017	0445E SW388 0.2 171025	Normal	ES1726955	0.175	0.0046	**0.343**	0.0326	0.02	0.168	0.0054	<0.002	<0.002	<0.002	0.0102	<0.002	<0.002	<0.002	<0.002	<0.002
SW388	On-base	16/11/2021	0445 SW388 211116	Normal	EM2122998	0.28	<0.01	**0.48**	0.04	<0.02	0.2	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW390	Off-base	13/10/2017	0445 SW390 0.5 171013	Normal	ES1725997	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW390	Off-base	31/07/2018	0445 SW390 0.5 180731	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW390	Off-base	26/11/2018	0445 SW390 0.5 181126	Normal	ES1835585	0.0005	<0.0005	0.001	<0.0005	<0.0005	**0.0005**	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW390	Off-base	9/11/2021	0445 SW390 211109	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW393	Off-base	16/10/2017	0445 SW393 0.1 171016	Normal	ES1726004	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW393	Off-base	1/08/2018	0445 SW393 0.2 180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW393	Off-base	26/11/2018	0445 SW393 0.2 181127	Normal	ES1835585	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW393	Off-base	16/11/2021	0445 SW393 211116	Normal	EM2122999	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW395	Off-base	9/10/2017	0445 QC253 171010	Interlab D	567888	0.094	0.004	**0.214**	0.018	0.02	0.12	0.003	<0.001	0.005	0.002	0.006	0.002	<0.001	<0.001	<0.001	<0.001
SW395	Off-base	9/10/2017	0445 QC153 171009	Field D	ES1725705	0.0737	0.0022	**0.196**	0.0274	0.0154	0.122	0.0025	<0.0005	<0.002	<0.0005	0.0067	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
SW395	Off-base	9/10/2017	0445 SW395 0.5 171010	Normal	ES1725705	0.0925	0.0022	**0.224**	0.0296	0.0164	0.132	0.0034	<0.0005	<0.002	<0.0005	0.0088	0.001	<0.0005	<0.0005	<0.0005	<0.0005
SW395	Off-base	3/11/2019	0445 SW395 0.5 191103	Normal	ES1936497	0.0688	0.0036	**0.126**	0.0092	0.0072	0.057	0.0038	<0.002	<0.002	<0.002	0.0052	0.0022	<0.002	<0.002	<0.002	<0.002
SW395	Off-base	16/11/2021	0445 SW395 211116	Normal	EM2122999	0.09	<0.01	**0.19**	0.03	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW396	Off-base	10/10/2017	0445 SW396 0.5 171010	Normal	ES1725715	0.434	0.025	**1.91**	0.214	0.16	1.48	0.0256	<0.0005	<0.002	<0.0005	0.189	0.0182	<0.0005	<0.0005	<0.0005	<0.0005
SW396	Off-base	2/08/2018	0445 SW396 0.5 180802	Normal	ES1823005	0.596	0.0914	***2.24***	0.394	0.316	1.64	0.0643	<0.0005	<0.002	0.113	0.281	0.0901	<0.0005	<0.0005	<0.0005	<0.0005
SW396	Off-base	3/11/2019	0445 SW396 0.5 191103	Normal	ES1936497	0.549	0.0356	**1.66**	0.153	0.157	1.11	0.0488	<0.002	<0.002	<0.002	0.129	0.0182	<0.002	<0.002	<0.002	<0.002
SW396	Off-base	16/11/2021	0445 SW396 211116	Normal	EM2122968	0.44	0.04	**1.51**	0.16	0.11	1.07	0.03	<0.02	<0.1	0.04	0.13	<0.02	<0.02	<0.02	<0.02	<0.02
SW397	Off-base	10/10/2017	0445 SW397 0.5 171010	Normal	ES1725715	5.74	0.434	***12.8***	1.21	1.06	7.02	0.39	<0.0005	0.025	0.225	1.88	0.224	0.0019	<0.0005	<0.0005	<0.0005
SW397	Off-base	10/10/2017	0445 SW397 1.0 171010	Normal	ES1725715	5.38	0.433	***12.3***	1.17	1.06	6.96	0.382	<0.0005	0.018	0.231	1.76	0.239	0.0013	<0.0005	<0.0005	<0.0005
SW397	Off-base	10/10/2017	0445 SW397 1.3 171010	Normal	ES1725715	5.61	0.462	***12.7***	1.17	1.09	7.12	0.371	<0.0005	0.024	0.217	1.85	0.211	0.0019	<0.0005	<0.0005	<0.0005
SW397	Off-base	2/08/2018	0445 SW397 0.5 180802	Normal	ES1823005	2.86	0.361	***7.52***	0.608	0.821	4.66	0.307	<0.0005	0.054	0.191	0.932	0.157	0.0019	<0.0005	<0.0005	<0.0005
SW397	Off-base	26/11/2018	0445 QC225 181126	Interlab D	630629	5.8	0.47	***11***	0.87	1.3	5.6	0.37	<0.001	0.21	0.33	1.3	0.3	0.002	<0.001	<0.001	<0.001
SW397	Off-base	26/11/2018	0445 QC125 181126	Field D	ES1835587	3.22	0.336	***7.36***	0.696	0.544	4.14	0.263	<0.0005	0.051	0.222	1.05	0.191	0.0025	<0.0005	<0.0005	<0.0005
SW397	Off-base	26/11/2018	0445 SW397 0.5 181126	Normal	ES1835587	3.84	0.362	***8.9***	0.773	0.711	5.06	0.282	<0.0005	0.051	0.236	1.14	0.206	0.0023	<0.0005	<0.0005	<0.0005
SW397	Off-base	3/11/2019	0445 QC135 191103	Field D	ES1936497	4.43	0.383	***9.5***	0.801	1.05	5.07	0.394	<0.002	0.077	0.289	1.19	0.215	0.0028	<0.002	<0.002	<0.002
SW397	Off-base	3/11/2019	0445 SW397 0.5 191103	Normal	ES1936497	4.27	0.348	***9.44***	0.738	0.98	5.17	0.364	<0.002	0.079	0.259	1.08	0.191	0.0028	<0.002	<0.002	<0.002
SW397	Off-base	16/11/2021	0445 SW397 211116	Normal	EM2122968	3.32	0.3	***6.64***	0.57	0.51	3.32	0.26	<0.02	0.2	0.23	0.72	0.19	<0.02	<0.02	<0.02	<0.02
SW398	Off-base	12/10/2017	0445 SW398 0.5 171012	Normal	ES1725997	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW398	Off-base	1/08/2018	0445 SW398 0.5 180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW398	Off-base	26/11/2018	0445 SW398 0.5 181126	Normal	ES1835585	0.0004	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW398	Off-base	16/11/2021	0445 SW398 211116	Normal	EM2122999	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW400	Off-base	10/10/2017	0445 SW400 0.3 171010	Normal	ES1725715	0.178	0.0225	**0.826**	0.164	0.103	0.648	0.0164	<0.0005	<0.002	0.0082	0.119	0.015	<0.0005	<0.0005	<0.0005	<0.0005
SW400	Off-base	2/08/2018	0445 QC206 180802	Interlab D	611294	0.15	0.012	**0.35**	0.027	0.034	0.2	0.012	<0.001	0.007	0.004	0.028	0.006	<0.001	0.001	0.002	<0.001
SW400	Off-base	2/08/2018	0445 QC106 180802	Field D	ES1823005	0.0992	0.0103	**0.228**	0.034	0.031	0.129	0.0084	<0.0005	<0.002	<0.0005	0.0179	0.0063	0.0007	<0.0005	<0.0005	<0.0005
SW400	Off-base	2/08/2018	0445 SW400 0.2 180802	Normal	ES1823005	0.113	0.0118	**0.283**	0.0237	0.0283	0.17	0.0097	<0.0005	<0.002	0.0063	0.024	0.0046	<0.0005	<0.0005	<0.0005	<0.0005
SW400	Off-base	3/11/2019	0445 SW400 0.2 191103	Normal	ES1936497	0.11	0.0084	**0.246**	0.0232	0.0218	0.136	0.0066	<0.002	<0.002	<0.002	0.0172	0.0032	<0.002	<0.002	<0.002	<0.002
SW400	Off-base	16/11/2021	0445 SW400 211116	Normal	EM2122968	0.7	0.06	**1.51**	0.26	0.13	0.81	0.06	<0.02	<0.1	0.05	0.14	0.04	<0.02	<0.02	<0.02	<0.02
SW401	Off-base	10/10/2017	0445 SW401 0.4 171010	Normal	ES1725715	0.179	0.0229	**0.687**	0.143	0.0922	0.508	0.0138	<0.0005	<0.002	0.0087	0.118	0.0113	<0.0005	<0.0005	<0.0005	<0.0005
SW401	Off-base	3/11/2019	0445 SW401 0.2 191103	Normal	ES1936497	0.0928	0.0074	**0.217**	0.0238	0.0202	0.124	0.006	<0.002	<0.002	<0.002	0.0142	0.0024	<0.002	<0.002	<0.002	<0.002
SW401	Off-base	16/11/2021	0445 SW401 211116	Normal	EM2122968	0.32	0.04	**0.85**	0.15	0.08	0.53	0.03	<0.02	<0.1	0.03	0.11	0.02	<0.02	<0.02	<0.02	<0.02
SW403	Off-base	12/10/2017	0445 SW403 0.5 171012	Normal	ES1725997	0.0532	0.0063	**0.224**	0.0389	0.0325	0.171	0.0019	<0.0005	<0.002	<0.0005	0.0279	0.0041	<0.0005	<0.0005	<0.0005	<0.0005
SW403	Off-base	12/11/2021	0445 SW403 211112	Normal	EM2122519	0.26	0.02	**0.59**	0.09	0.07	0.33	<0.02	<0.02	<0.1	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
SW404	Off-base	11/10/2017	0445 SW404 0.5 171011	Normal	ES1725716	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW404	Off-base	1/08/2018	0445 SW404 0.5 180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW404	Off-base	26/11/2018	0445 SW404 0.52 181126	Normal	ES1835585	0.0025	<0.0005	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW404	Off-base	12/11/2021	0445 SW404 211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW405	Off-base	12/10/2017	0445 SW405 0.2 171012	Normal	ES1725997	0.0481	0.0046	**0.23**	0.0386	0.0339	0.182	0.0016	<0.0005	<0.002	<0.0005	0.0214	0.0027	<0.0005	<0.0005	<0.0005	<0.0005
SW405	Off-base	2/08/2018	0445 SW405 0.1 180802	Normal	ES1823003	0.0401	0.0021	**0.0997**	0.0069	0.0053	0.0596	0.0022	<0.0005	<0.002	<0.0005	0.0013	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
SW405	Off-base	12/11/2021	0445 SW405 211112	Normal	EM2122519	0.16	0.02	**0.51**	0.08	0.07	0.35	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
SW409	Off-base	14/02/2018	0445 SW409 0.0 180214	Normal	ES1805190	0.0947	0.0062	**0.115**	0.0026	0.002	0.0204	0.0016	<0.0005	<0.002	0.0034	0.0048	0.0017	0.0009	0.0007	<0.0005	<0.0005
SW409	Off-base	12/11/2021	0445 SW409 211112	Normal	EM2122519	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW412	Off-base	12/10/2017	0445 SW412 0.5 171012	Normal	ES1725997	0.0482	0.0037	**0.213**	0.0245	0.0201	0.165	0.001	<0.0005	<0.002	<0.0005	0.0065	0.0025	0.0006	<0.0005	<0.0005	<0.0005
SW412	Off-base	2/08/2018	0445 SW412 0.1 180802	Normal	ES1823003	0.0384	0.0051	0.0674	0.005	0.0022	0.029	0.0011	<0.0005	<0.002	<0.0005	0.0064	0.0031	0.001	<0.0005	<0.0005	<0.0005
SW412	Off-base	26/11/2018	0445 QC126 181126	Field D	ES1835585	0.0406	0.0037	0.0588	0.0028	0.002	0.0182	<0.0005	<0.0005	<0.002	0.002	0.0064	0.0016	0.0009	0.0007	<0.0005	<0.0005
SW412	Off-base	26/11/2018	0445 SW412 0.2 181126	Normal	ES1835585	0.0383	0.0036	0.0569	0.0026	0.0019	0.0186	<0.0005	<0.0005	<0.002	0.0019	0.0068	0.0014	0.0008	0.0007	<0.0005	<0.0005
SW412	Off-base	12/11/2021	0445 SW412 211112	Normal	EM2122519	0.04	<0.01	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW416	Off-base	11/10/2017	0445 SW416 0.5 171011	Normal	ES1725716	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW416	Off-base	1/08/2018	0445 SW416 0.5 180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW416	Off-base	26/11/2018	0445 SW416 0.5 181126	Normal	ES1835585	0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW416	Off-base	12/11/2021	0445 SW416 211111	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

									Perfluorocarbons									
									Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)
									µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
								LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water										**0.56**	**0.07**													
PFAS NEMP 2.0 Table 1 Health Recreational Water										*10*	*2*													
PFAS NEMP 2.0 Table 5 Freshwater 95%									0.13	220														
PFAS NEMP 2.0 Table 5 Freshwater 99%									0.00023	19														
Location Code	**Property**	**Sampled Date**	**Field ID**		**Sample Type**	**Lab Report No.**																		
SW424	Off-base	10/10/2017	0445_QC213		Interlab_D	567942		3.3	0.13	***5.1***	0.16	0.22	1.8	0.1	<0.01	0.1	0.11	0.36	0.08	0.02	<0.01	<0.01	<0.01
SW424	Off-base	11/10/2017	0445_QC113		Field_D	ES1725716		2.52	0.0623	***4.85***	0.131	0.126	2.33	0.0687	<0.0005	0.011	0.0752	0.435	0.0445	0.0115	0.0016	0.0006	<0.0005
SW424	Off-base	11/10/2017	0445_SW424_0.1_171011		Normal	ES1725716		2.12	0.0607	***4.14***	0.136	0.133	2.02	0.0714	<0.0005	0.01	0.0731	0.371	0.0429	0.0109	0.0013	<0.0005	<0.0005
SW424	Off-base	13/10/2017	0445_SW424_0.1_171013		Normal	ES1725997		0.706	0.0247	**1.33**	0.059	0.0626	0.622	0.0142	<0.0005	<0.002	0.0475	0.103	0.0219	0.006	0.0011	<0.0005	<0.0005
SW424	Off-base	15/11/2021	0445_QC208_211115		Interlab_D	B42787		1.1	0.04	**1.83**	0.03	0.05	0.73	0.03	<0.01	0.06	0.04	0.1	0.02	<0.01	<0.01	<0.01	<0.01
SW424	Off-base	16/11/2021	0445_SW424_211115		Normal	EM2122999		0.76	0.03	**1.16**	0.04	0.02	0.4	0.02	<0.02	<0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
SW424	Off-base	16/11/2021	0445_QC108_211115		Field_D	EM2122998		0.74	0.03	**1.26**	0.04	0.03	0.52	0.02	<0.02	<0.1	0.03	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
SW427	Off-base	16/10/2017	0445_SW427_0.0_171016		Normal	ES1726004		0.111	0.003	**0.133**	0.0045	0.0026	0.0222	0.0018	<0.0005	<0.002	0.0021	0.0046	0.0016	0.0009	0.0008	<0.0005	<0.0005
SW427	Off-base	15/11/2021	0445_SW427_211115		Normal	EM2122999		0.19	<0.01	**0.25**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW430	Off-base	16/10/2017	0445_SW430_0.1_171016		Normal	ES1726004		0.0465	0.0036	0.0618	0.001	0.0025	0.0153	0.0008	<0.0005	<0.002	<0.0005	0.0042	0.0015	0.0006	0.0006	<0.0005	<0.0005
SW430	Off-base	2/08/2018	0445_SW430_0.1_180802		Normal	ES1823003		0.0199	0.0039	0.0364	<0.0005	0.0011	0.0165	0.0005	<0.0005	<0.002	<0.0005	0.0042	0.001	<0.0005	<0.0005	<0.0005	<0.0005
SW430	Off-base	16/11/2021	0445_SW430_211115		Normal	EM2122999		0.1	<0.01	**0.16**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW431	Off-base	16/10/2017	0445_SW431_0.1_171016		Normal	ES1726004		0.0525	0.0032	**0.0732**	<0.0005	0.0026	0.0207	0.001	<0.0005	<0.002	<0.0005	0.0044	0.0013	0.0005	0.0005	<0.0005	<0.0005
SW431	Off-base	16/11/2021	0445_SW431_211116		Normal	EM2122999		0.07	<0.01	**0.1**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW432	Off-base	16/10/2017	0445_SW432_0.1_171016		Normal	ES1726004		0.0545	0.0044	**0.0769**	<0.0005	0.0023	0.0224	0.001	<0.0005	<0.002	<0.0005	0.0055	0.0019	0.0008	0.0008	<0.0005	<0.0005
SW432	Off-base	16/11/2021	0445_SW432_211116		Normal	EM2122999		0.05	<0.01	**0.08**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW434	Off-base	9/10/2017	0445_SW434_0.5_171011		Normal	ES1725705		0.0038	<0.0005	0.0045	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW434	Off-base	15/11/2021	0445_SW434_211115		Normal	EM2122999		0.05	<0.01	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW448	On-base	20/10/2017	0445S_SW448_0.1_171020		Normal	ES1726682		1.41	0.0428	***2.38***	0.108	0.0448	0.965	0.104	<0.0005	0.015	0.179	0.111	0.0549	0.0207	0.0026	0.0042	0.0005
SW448	On-base	16/11/2021	0445_SW448_211115		Normal	EM2122998		2.09	0.07	***3.23***	0.06	0.05	1.14	0.04	<0.02	<0.1	0.12	0.25	0.03	<0.02	<0.02	<0.02	<0.02
SW462	Off-base	23/11/2017	0445_SW462_0.1_171123		Normal	ES1729741		0.0617	0.0059	**0.117**	0.0122	0.0159	0.0552	0.0044	<0.0005	<0.002	<0.0005	0.0123	0.0031	0.0011	0.0006	<0.0005	<0.0005
SW462	Off-base	1/08/2018	0445_SW462_0.2_180801		Normal	ES1823003		0.0265	0.0035	0.0481	<0.0005	0.0017	0.0216	0.0008	<0.0005	<0.002	<0.0005	0.0045	0.0016	0.0006	<0.0005	<0.0005	<0.0005
SW462	Off-base	11/11/2021	0445_SW462_211111		Normal	EM2122518		0.08	<0.01	**0.19**	0.03	0.02	0.11	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW463	Off-base	11/12/2017	0445_SW463_0.1_171211		Normal	ES1731468		0.54	0.119	**1.03**	0.0266	0.0392	0.49	0.0108	<0.0005	<0.002	0.0448	0.206	0.0173	<0.0005	<0.0005	<0.0005	<0.0005
SW463	Off-base	16/11/2021	0445_SW463_211115		Normal	EM2122999		1.36	0.04	***2.1***	0.05	0.03	0.74	0.04	<0.02	<0.1	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
SW470	Off-base	2/08/2018	0445_SW470_0.5_180802		Normal	ES1823003		0.16	0.0048	**0.33**	0.0223	0.0153	0.17	0.0057	<0.0005	<0.002	<0.0005	0.0066	0.0028	<0.0005	<0.0005	<0.0005	<0.0005
SW470	Off-base	3/11/2019	0445_SW470_0.5_191103		Normal	ES1936497		0.179	0.0052	**0.388**	0.0258	0.0264	0.209	0.0074	<0.002	<0.002	<0.002	0.0072	<0.002	<0.002	<0.002	<0.002	<0.002
SW470	Off-base	16/11/2021	0445_SW470_211116		Normal	EM2122999		0.06	<0.01	**0.13**	0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SW471	Off-base	2/08/2018	0445_SW471_0.2_180802		Normal	ES1823005		0.257	0.0312	**1.14**	0.306	0.192	0.881	0.0351	<0.0005	<0.002	0.0536	0.138	0.0319	<0.0005	<0.0005	<0.0005	<0.0005
SW471	Off-base	3/11/2019	0445_SW471_0.5_191103		Normal	ES1936497		0.69	0.0844	***2.55***	0.414	0.391	1.86	0.081	<0.002	<0.002	0.08	0.316	0.0508	<0.002	<0.002	<0.002	<0.002
SW471	Off-base	16/11/2021	0445_SW471_211116		Normal	EM2122968		0.81	0.06	**1.82**	0.23	0.15	1.01	0.07	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02
SW487	Off-base	2/08/2018	0445_SW487_0.01_180802		Normal	ES1823005		6.26	0.383	***9.09***	0.541	0.536	2.83	0.35	<0.0005	0.041	0.191	0.671	0.179	0.0013	<0.0005	<0.0005	<0.0005
SW487	Off-base	16/11/2021	0445_SW487_211116		Normal	EM2122968		3.45	0.3	***6.82***	0.6	0.57	3.37	0.27	<0.02	0.2	0.21	0.69	0.18	<0.02	<0.02	<0.02	<0.02

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

						Perfluorocarbons													
						Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**														
SW307	On-base	17/11/2021	0445_SW307_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-
SW310	On-base	17/11/2021	0445_SW310_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.32	-
SW311	On-base	17/11/2021	0445_SW311_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.37	-
SW313	On-base	17/11/2021	0445_QC211_211117	Interlab_D	842787	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	8.14	0.00645
SW313	On-base	17/11/2021	0445_QC111_211117	Field_D	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.87	-
SW313	On-base	17/11/2021	0445_SW313_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.1	-
SW316	On-base	17/10/2017	0445S_SW316_0.1_171017	Normal	ES1726190	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	1.26	-
SW316	On-base	17/11/2021	0445_SW316_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.24	-
SW321	On-base	17/11/2021	0445_QC212_211117	Interlab_D	842787	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	11.64	0.01041
SW321	On-base	17/11/2021	0445_SW321_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.75	-
SW321	On-base	17/11/2021	0445_QC112_211117	Field_D	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.21	-
SW322	On-base	17/11/2021	0445_SW322_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.34	-
SW323	On-base	17/10/2017	0445S_SW323_0.2_171017	Normal	ES1726190	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	0.005	<0.002	<0.002	1.65	-
SW323	On-base	17/11/2021	0445_SW323_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	-
SW324	On-base	20/10/2017	0445S_SW324_0.1_171020	Normal	ES1726682	<0.0005	<0.0005	0.0039	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.015	0.003	<0.001	2.86	-
SW324	On-base	17/11/2021	0445_QC210_211117	Interlab_D	842787	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	4.43	0.00371
SW324	On-base	17/11/2021	0445_SW324_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.2	-
SW324	On-base	17/11/2021	0445_QC110_211117	Field_D	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.73	-
SW326	On-base	17/11/2021	0445_SW326_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.49	0.11	<0.05	13.2	-
SW332	On-base	17/10/2017	0445S_SW332_0.05_171017	Normal	ES1726190	<0.002	<0.005	0.0164	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	5.47	-
SW332	On-base	17/11/2021	0445_SW332_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-
SW333	On-base	17/10/2017	0445S_SW333_0.05_171017	Normal	ES1726190	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.68	-
SW333	On-base	17/11/2021	0445_SW333_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.19	-
SW336	On-base	18/10/2017	0445S_QC267_171018	Interlab_D	569078	<0.001	<0.001	0.042	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	0.005	0.92	1.9	0.018	60.943	-
SW336	On-base	18/10/2017	0445S_QC167_171018	Field_D	ES1726433	<0.002	<0.005	0.0132	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	0.006	0.93	1.3	0.02	26.8	-
SW336	On-base	18/10/2017	0445S_SW336_0.1_171018	Normal	ES1726433	<0.002	<0.005	0.0126	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	0.006	1.03	1.27	0.016	27.4	-
SW336	On-base	15/11/2021	0445_SW336_211115	Normal	EM2122998	<0.02	<0.05	0.03	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.35	0.83	0.14	10.5	-
SW338	On-base	18/10/2017	0445S_SW338_0.2_171018	Normal	ES1726433	<0.002	<0.005	0.0046	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	7.18	-
SW338	On-base	10/11/2021	0445_SW338_211109	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.7	-
SW340	On-base	18/10/2017	0445S_SW340_0.03_171018	Normal	ES1726433	<0.002	<0.005	0.011	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	0.18	0.41	0.045	9.38	-
SW340	On-base	10/11/2021	0445_SW340_211109	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.61	-
SW346	On-base	12/10/2017	0445S_SW346_0.2_171013	Normal	ES1725991	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.052	0.037	0.001	2.64	-
SW346	On-base	17/11/2021	0445_SW346_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.23	-
SW349	On-base	12/10/2017	0445S_QC159_171012	Field_D	ES1725991	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.011	0.002	<0.001	1.99	-
SW349	On-base	13/10/2017	0445S_SW349_0.5_171013	Normal	ES1725991	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.01	0.001	<0.001	2.1	-
SW349	On-base	15/11/2021	0445_QC206_211115	Interlab_D	842787	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.51	0.00111
SW349	On-base	16/11/2021	0445_QC106_211115	Field_D	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1	-
SW349	On-base	16/11/2021	0445_SW349_211115	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	-
SW355	On-base	13/10/2017	0445S_SW355_0.5_171013	Normal	ES1725991	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.813	-
SW355	On-base	16/11/2021	0445_QC107_211117	Field_D	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-
SW355	On-base	17/11/2021	0445_QC207_211117	Interlab_D	842787	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.52	0.00041
SW355	On-base	17/11/2021	0445_SW355_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-
SW370	On-base	23/10/2017	0445N_SW370_0.01_171023	Normal	ES1726698	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.003	<0.001	<0.001	0.55	-
SW370	On-base	17/11/2021	0445_SW370_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-
SW374	On-base	23/10/2017	0445N_SW374_0.1_171023	Normal	ES1726698	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.525	-
SW374	On-base	17/11/2021	0445_SW374_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-
SW375	On-base	23/10/2017	0445N_QC228_171023	Interlab_D	569535	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.451	-
SW375	On-base	23/10/2017	0445N_QC128_171023	Field_D	ES1726698	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.465	-
SW375	On-base	23/10/2017	0445N_SW375_0.1_171023	Normal	ES1726698	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.44	-
SW375	On-base	1/08/2018	0445_QC205_180801	Interlab_D	611290	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.145	0.000107
SW375	On-base	1/08/2018	0445_QC105_180801	Field_D	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.139	-
SW375	On-base	1/08/2018	0445_SW375_0.2_180801	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.144	-
SW375	On-base	17/11/2021	0445_SW375_211117	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
SW379	On-base	16/11/2021	0445_SW379_21116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.07	-
SW380	On-base	10/11/2021	0445_SW380_211108	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.59	-
SW382	On-base	24/10/2017	0445E_QC131_171024	Field_D	ES1726816	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.164	-
SW382	On-base	24/10/2017	0445E_SW382_0.1_171024	Normal	ES1726816	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.175	-
SW382	On-base	16/11/2021	0445_QC209_211116	Interlab_D	842787	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.00001
SW382	On-base	16/11/2021	0445_QC109_211116	Field_D	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW382	On-base	17/11/2021	0445_SW382_211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW387	On-base	25/10/2017	0445E_SW387_0.2_171025	Normal	ES1726955	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.222	-
SW387	On-base	16/11/2021	0445_SW387_211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-

						Perfluorocarbons														
						Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																				
PFAS NEMP 2.0 Table 1 Health Recreational Water																				
PFAS NEMP 2.0 Table 5 Freshwater 95%																				
PFAS NEMP 2.0 Table 5 Freshwater 99%																				
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**															
SW388	On-base	25/10/2017	0445E_SW388_0.2_171025	Normal	ES1726955	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.416	-
SW388	On-base	16/11/2021	0445_SW388_211116	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.54	-
SW390	Off-base	13/10/2017	0445_SW390_0.5_171013	Normal	ES1725997	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0006	-
SW390	Off-base	31/07/2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW390	Off-base	26/11/2018	0445_SW390_0.5_181126	Normal	ES1835585	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.001	-
SW390	Off-base	9/11/2021	0445_SW390_211109	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW393	Off-base	16/10/2017	0445_SW393_0.1_171016	Normal	ES1726004	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0029	-
SW393	Off-base	1/08/2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW393	Off-base	26/11/2018	0445_SW393_0.2_181127	Normal	ES1835585	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0009	-
SW393	Off-base	16/11/2021	0445_SW393_211116	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW395	Off-base	9/10/2017	0445_QC253_171010	Interlab_D	567888	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.274	-
SW395	Off-base	9/10/2017	0445_QC153_171009	Field_D	ES1725705	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.251	-
SW395	Off-base	9/10/2017	0445_SW395_0.5_171010	Normal	ES1725705	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.286	-
SW395	Off-base	3/11/2019	0445_SW395_0.5_191103	Normal	ES1936497	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.157	-
SW395	Off-base	16/11/2021	0445_SW395_211116	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-
SW396	Off-base	10/10/2017	0445_SW396_0.5_171010	Normal	ES1725715	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	2.54	-
SW396	Off-base	2/08/2018	0445_SW396_0.5_180802	Normal	ES1823005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	3.58	-
SW396	Off-base	3/11/2019	0445_SW396_0.5_191103	Normal	ES1936497	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	2.2	-
SW396	Off-base	16/11/2021	0445_SW396_211116	Normal	EM2122968	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.02	-
SW397	Off-base	10/10/2017	0445_SW397_0.5_171010	Normal	ES1725715	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	18.2	-
SW397	Off-base	10/10/2017	0445_SW397_1.0_171010	Normal	ES1725715	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	17.7	-
SW397	Off-base	10/10/2017	0445_SW397_1.3_171010	Normal	ES1725715	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.023	<0.001	<0.001	18.2	-
SW397	Off-base	2/08/2018	0445_SW397_0.5_180802	Normal	ES1823005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.001	0.022	<0.001	<0.001	11	-
SW397	Off-base	26/11/2018	0445_QC225_181126	Interlab_D	630629	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	0.002	0.013	<0.001	<0.001	17	0.012
SW397	Off-base	26/11/2018	0445_QC125_181126	Field_D	ES1835587	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.023	<0.001	<0.001	10.7	-
SW397	Off-base	26/11/2018	0445_SW397_0.5_181126	Normal	ES1835587	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	12.7	-
SW397	Off-base	3/11/2019	0445_QC135_191103	Field_D	ES1936497	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	0.021	<0.002	<0.002	13.9	-
SW397	Off-base	3/11/2019	0445_SW397_0.5_191103	Normal	ES1936497	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	0.019	<0.002	<0.002	13.5	-
SW397	Off-base	16/11/2021	0445_SW397_211116	Normal	EM2122968	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.62	-
SW398	Off-base	12/10/2017	0445_SW398_0.5_171012	Normal	ES1725997	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0009	-
SW398	Off-base	1/08/2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW398	Off-base	26/11/2018	0445_SW398_0.5_181126	Normal	ES1835585	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0004	-
SW398	Off-base	16/11/2021	0445_SW398_211116	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW400	Off-base	10/10/2017	0445_SW400_0.3_171010	Normal	ES1725715	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.27	-
SW400	Off-base	2/08/2018	0445_QC206_180802	Interlab_D	611294	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	0.006	0.005	<0.001	<0.005	<0.001	<0.001	0.494	0.000362
SW400	Off-base	2/08/2018	0445_QC106_180802	Field_D	ES1823005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.337	-
SW400	Off-base	2/08/2018	0445_SW400_0.2_180802	Normal	ES1823005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.391	-
SW400	Off-base	3/11/2019	0445_SW400_0.2_191103	Normal	ES1936497	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.326	-
SW400	Off-base	16/11/2021	0445_SW400_211116	Normal	EM2122968	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.25	-
SW401	Off-base	10/10/2017	0445_SW401_0.4_171010	Normal	ES1725715	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.1	-
SW401	Off-base	3/11/2019	0445_SW401_0.2_191103	Normal	ES1936497	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.291	-
SW401	Off-base	16/11/2021	0445_SW401_211116	Normal	EM2122968	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.31	-
SW403	Off-base	12/10/2017	0445_SW403_0.5_171012	Normal	ES1725997	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.336	-
SW403	Off-base	12/11/2021	0445_SW403_211112	Normal	EM2122519	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.84	-
SW404	Off-base	11/10/2017	0445_SW404_0.5_171011	Normal	ES1725716	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0012	-
SW404	Off-base	1/08/2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW404	Off-base	26/11/2018	0445_SW404_0.52_181126	Normal	ES1835585	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0025	-
SW404	Off-base	12/11/2021	0445_SW404_211112	Normal	EM2122519	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW405	Off-base	12/10/2017	0445_SW405_0.2_171012	Normal	ES1725997	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.333	-
SW405	Off-base	2/08/2018	0445_SW405_0.1_180802	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.118	-
SW405	Off-base	12/11/2021	0445_SW405_211112	Normal	EM2122519	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.74	-
SW409	Off-base	14/02/2018	0445_SW409_0.0_180214	Normal	ES1805190	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.139	-
SW409	Off-base	12/11/2021	0445_SW409_211112	Normal	EM2122519	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
SW412	Off-base	12/10/2017	0445_SW412_0.5_171012	Normal	ES1725997	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.272	-
SW412	Off-base	2/08/2018	0445_SW412_0.1_180802	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0913	-
SW412	Off-base	26/11/2018	0445_QC126_181126	Field_D	ES1835585	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0789	-
SW412	Off-base	26/11/2018	0445_SW412_0.2_181126	Normal	ES1835585	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0766	-
SW412	Off-base	12/11/2021	0445_SW412_211112	Normal	EM2122519	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-
SW416	Off-base	11/10/2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW416	Off-base	1/08/2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW416	Off-base	26/11/2018	0445_SW416_0.5_181126	Normal	ES1835585	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0005	-
SW416	Off-base	12/11/2021	0445_SW416_211111	Normal	EM2122519	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-

						Perfluorocarbons													
						Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																				
PFAS NEMP 2.0 Table 1 Health Recreational Water																				
PFAS NEMP 2.0 Table 5 Freshwater 95%																				
PFAS NEMP 2.0 Table 5 Freshwater 99%																				
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report No.**															
SW424	Off-base	10/10/2017	0445_QC213	Interlab_D	567942	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	6.38	-
SW424	Off-base	11/10/2017	0445_QC113	Field_D	ES1725716	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	5.82	-
SW424	Off-base	11/10/2017	0445_SW424_0.1_171011	Normal	ES1725716	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	5.05	-
SW424	Off-base	13/10/2017	0445_SW424_0.1_171013	Normal	ES1725997	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.01	0.003	<0.001	1.68	-
SW424	Off-base	15/11/2021	0445_QC208_211115	Interlab_D	B42787	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.22	0.00187
SW424	Off-base	16/11/2021	0445_SW424_211115	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.36	-
SW424	Off-base	16/11/2021	0445_QC108_211115	Field_D	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.5	-
SW427	Off-base	16/10/2017	0445_SW427_0.0_171016	Normal	ES1726004	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	0.156	-
SW427	Off-base	15/11/2021	0445_SW427_211115	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.25	-
SW430	Off-base	16/10/2017	0445_SW430_0.1_171016	Normal	ES1726004	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0766	-
SW430	Off-base	2/08/2018	0445_SW430_0.1_180802	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0471	-
SW430	Off-base	16/11/2021	0445_SW430_211115	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	-
SW431	Off-base	16/10/2017	0445_SW431_0.1_171016	Normal	ES1726004	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0867	-
SW431	Off-base	16/11/2021	0445_SW431_211116	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
SW432	Off-base	16/10/2017	0445_SW432_0.1_171016	Normal	ES1726004	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0936	-
SW432	Off-base	16/11/2021	0445_SW432_211116	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-
SW434	Off-base	9/10/2017	0445_SW434_0.5_171011	Normal	ES1725705	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0045	-
SW434	Off-base	15/11/2021	0445_SW434_211115	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
SW448	On-base	20/10/2017	0445S_SW448_0.1_171020	Normal	ES1726682	0.0021	<0.0005	0.0056	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.012	0.005	<0.001	3.09	-
SW448	On-base	16/11/2021	0445_SW448_211115	Normal	EM2122998	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.85	-
SW462	Off-base	23/11/2017	0445_SW462_0.1_171123	Normal	ES1729741	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.172	-
SW462	Off-base	1/08/2018	0445_SW462_0.2_180801	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0608	-
SW462	Off-base	11/11/2021	0445_SW462_211111	Normal	EM2122518	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	-
SW463	Off-base	11/12/2017	0445_SW463_0.1_171211	Normal	ES1731468	<0.0005	0.006	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.5	-
SW463	Off-base	16/11/2021	0445_SW463_211115	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.35	-
SW470	Off-base	2/08/2018	0445_SW470_0.5_180802	Normal	ES1823003	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.388	-
SW470	Off-base	3/11/2019	0445_SW470_0.5_191103	Normal	ES1936497	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.46	-
SW470	Off-base	16/11/2021	0445_SW470_211116	Normal	EM2122999	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
SW471	Off-base	2/08/2018	0445_SW471_0.2_180802	Normal	ES1823005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.92	-
SW471	Off-base	3/11/2019	0445_SW471_0.5_191103	Normal	ES1936497	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	3.97	-
SW471	Off-base	16/11/2021	0445_SW471_211116	Normal	EM2122968	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.6	-
SW487	Off-base	2/08/2018	0445_SW487_0.01_180802	Normal	ES1823005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.022	<0.001	<0.001	12	-
SW487	Off-base	16/11/2021	0445_SW487_211116	Normal	EM2122968	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.84	-

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

	Lab Report Number	EM2122518	EM2122518		EM2122518	EM2122518		EM2122518	EM2122518		EM2122518	EM2122518		EM2122518	EM2122518	
	Field ID	0445_MW329_211110	0445_QC102_211110	RPD	0445_MW404_211111	0445_QC103_211111	RPD	0445_MW350_S_211111	0445_QC105_211111	RPD	0445_MW042_211111	0445_QC104_211111	RPD	0445_MW319_211110	0445_QC101_211110	RPD
	Sampled Date/Time	10/11/2021 14:22	10/11/2021 14:22		11/11/2021 14:41	11/11/2021 14:41		11/11/2021 14:37	11/11/2021 14:37		12/11/2021 10:21	12/11/2021 10:21		10/11/2021 10:55	10/11/2021 10:55	
Chem_Group	**ChemName**	**Units**	**LOR**													
	Sum of WA DWER PFAS (n=10)*	ug/L	0.01 : 0.05 (Interlab)	0.21	0.21	0	102	90.7	12	64.6	65.4	1	12.6	12.4	2	0.37	0.39	5
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	0.03	0.03	0	50.2	40.9	20	15.3	15.2	1	3.61	3.3	9	0.28	0.31	10
	Perfluorooctanoate (PFOA)	ug/L	0.01	<0.01	<0.01	0	3.86	3.96	3	3.05	3.06	0	0.49	0.46	6	<0.01	<0.01	0
	Sum of PFHxS and PFOS	ug/L	0.01	0.17	0.17	0	81.1	69.3	16	48.7	48.9	0	8.66	8.79	1	0.37	0.39	5
	Perfluorobutane sulfonic acid (PFBS)	ug/L	0.02 : 0.01 (Interlab)	0.04	0.04	0	5.2	5.33	2	3.62	3.65	1	0.92	0.99	7	<0.02	<0.02	0
	Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.02 : 0.01 (Interlab)	0.03	0.03	0	3.16	2.88	9	2.6	2.7	4	**1.13**	**0.81**	**33**	<0.02	<0.02	0
	Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	0.14	0.14	0	30.9	28.4	8	33.4	33.7	1	5.05	5.49	8	0.09	0.08	12
	Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	2.81	2.75	2	2.86	2.91	2	0.49	0.38	25	<0.02	<0.02	0
	Perfluorodecanesulfonic acid (PFDS)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	Perfluorobutanoic acid (PFBA)	ug/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	**0.8**	**1.1**	**32**	**0.6**	**0.9**	**40**	0.2	<0.2	0	<0.1	<0.1	0
	Perfluoropentanoic acid (PFPeA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	1.66	1.74	5	1.39	1.45	4	0.35	0.33	6	<0.02	<0.02	0
	Perfluorohexanoic acid (PFHxA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	7.59	7.32	4	5.72	5.86	2	1.62	1.52	6	<0.02	<0.02	0
	Perfluoroheptanoic acid (PFHpA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	1.73	1.86	7	1.16	1.24	7	0.31	0.24	25	<0.02	<0.02	0
	Perfluorononanoic acid (PFNA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	Perfluorodecanoic acid (PFDA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	Perfluoroundecanoic acid (PFUnDA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	Perfluorododecanoic acid (PFDoDA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	Perfluorotridecanoic acid (PFTrDA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.1	<0.11	0	<0.09	<0.09	0	<0.05	<0.09	0	<0.05	<0.05	0
	Perfluorooctane sulfonamide (FOSA)	ug/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	ug/L	0.05	<0.05	<0.05	0	<0.1	<0.11	0	<0.09	<0.09	0	<0.05	<0.09	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.0001	<0.00011	0	<0.00009	<0.00009	0	<0.00005	<0.00009	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	ug/L	0.05	<0.05	<0.05	0	<0.1	<0.11	0	<0.09	<0.09	0	<0.05	<0.09	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	ug/L	0.05	<0.05	<0.05	0	<0.1	<0.11	0	<0.09	<0.09	0	<0.05	<0.09	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	ug/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ug/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.04	<0.04	0	<0.04	<0.04	0	<0.02	<0.04	0	<0.02	<0.02	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	6:2 Fluorotelomer Sulfonate (6:2 FTS)	ug/L	0.05	<0.05	<0.05	0	0.06	0.06	0	0.37	0.29	24	**0.07**	**0.05**	**33**	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FS)	ug/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	ug/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Sum of PFAS	ug/L	0.01 : 0.1 (Interlab)	0.24	0.24	0	108	96.3	11	70.1	71	1	14.2	13.6	4	0.37	0.39	5

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are:
30 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		Lab Report Number	EM2122518	EM2122518		EM2122998	EM2122998		EM2122998	EM2122998		EM2122999	EM2122998		EM2122998	EM2122998	
		Field ID	0445_MW051_211110	0445_QC100_211110	RPD	0445_SW349_211115	0445_QC106_211115	RPD	0445_SW355_211117	0445_QC107_211117	RPD	0445_SW424_211115	0445_QC108_211115	RPD	0445_SW324_211117	0445_QC110_211117	RPD
		Sampled Date/Time	11/11/2021 8:07	11/11/2021 8:07		16/11/2021 8:15	16/11/2021 8:15		17/11/2021 15:50	17/11/2021 15:50		16/11/2021 8:05	16/11/2021 8:05		17/11/2021 8:31	17/11/2021 8:31	
Chem_Group	**ChemName**	**Units**	**LOR**														
	Sum of WA DWER PFAS (n=10)*	µg/L	0.01 : 0.05 (Interlab)	<0.01	<0.01	0	1.06	0.98	8	0.36	0.36	0	1.32	1.45	9	3.09	2.66	15
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	0	0.61	0.55	10	0.22	0.21	5	0.76	0.74	3	1.86	1.61	14
	Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	0	0.04	0.04	0	**0.01**	**0.02**	**67**	0.03	0.03	0	0.1	0.08	22
	Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	0	0.82	0.73	12	0.3	0.29	3	1.16	1.26	8	2.61	2.23	16
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.04	0.05	22	<0.02	<0.02	0	0.04	0.04	0	0.06	0.06	0
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	**0.03**	**0.02**	**40**	<0.02	<0.02	0	**0.02**	**0.03**	**40**	0.05	0.04	22
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	0	0.21	0.18	15	0.08	0.08	0	0.4	0.52	26	0.75	0.62	19
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	0.02	0.02	0	0.04	0.03	29
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.06	0.06	0	0.02	0.02	0	0.03	0.03	0	0.1	0.1	0
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.08	0.08	0	0.03	0.03	0	**0.06**	**0.09**	**40**	0.17	0.15	13
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.02	0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	0.05	0.04	22
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	0.02	<0.02	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	1.09	1	9	0.36	0.36	0	1.36	1.5	10	3.2	2.73	16

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are:
30 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

			Lab Report Number	EM2122998	EM2122998		EM2122998	EM2122998		EM2122998	EM2122998		EM2125903	EM2125903		EM2125903	EM2125903	
			Field ID	0445_SW321_211117	0445_QC112_211117	RPD	0445_SW382_211116	0445_QC109_211116	RPD	0445_SW313_211117	0445_QC111_211117	RPD	0445_MW342_211222	0445_QC100_211222	RPD	0445_MW307_211222	0445_QC101_211222	RPD
			Sampled Date/Time	17/11/2021 8:51	17/11/2021 8:51		17/11/2021 7:53	17/11/2021 7:53		17/11/2021 8:58	17/11/2021 8:58		22/12/2021	22/12/2021		22/12/2021	22/12/2021	
Chem_Group	**ChemName**	**Units**	**LOR**															
	Sum of WA DWER PFAS (n=10)*	µg/L	0.01 : 0.05 (Interlab)	6.49	6.94	7	<0.01	<0.01	0	5.79	6.55	12	11.8	12.1	3	1130	1120	1
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	3.48	3.88	11	<0.01	<0.01	0	3.13	3.85	21	4.15	4.37	5	94.3	91	4
	Perfluorooctanoate (PFOA)	µg/L	0.01	0.09	0.08	12	<0.01	<0.01	0	0.3	0.3	0	0.2	0.21	5	44.2	44.8	1
	Sum of PFHxS and PFOS	µg/L	0.01	5.8	6.24	7	<0.01	<0.01	0	4.43	5.13	15	9.15	9.48	4	590	577	2
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.16	0.18	12	<0.02	<0.02	0	0.1	0.1	0	0.94	0.89	5	107	110	3
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	0.16	0.17	6	<0.02	<0.02	0	0.06	0.07	15	0.78	0.7	11	97.6	85.9	13
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	2.32	2.36	2	<0.01	<0.01	0	1.3	1.28	2	5	5.11	2	496	486	2
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	0.1	0.1	0	<0.02	<0.02	0	0.07	0.06	15	0.36	0.37	3	41.2	38.6	7
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.05	<0.05	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	0.1	0.1	0	0.1	0.1	0	13.4	12.4	8
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	0.06	0.05	18	<0.02	<0.02	0	0.31	0.33	6	0.24	0.24	0	71.3	71	0
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.35	0.36	3	<0.02	<0.02	0	0.44	0.48	9	1.1	1.13	3	170	168	1
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.03	0	<0.02	<0.02	0	0.11	0.11	0	0.08	0.07	13	31.5	32.1	2
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	0.18	0.19	5	<0.02	<0.02	0	0.6	0.6	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.05	<0.05	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.05	<0.05	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.05	<0.05	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.05	<0.05	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.14	<0.13	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.14	<0.13	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00014	<0.00013	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.14	<0.13	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.14	<0.13	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.05	<0.05	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	0.9	0.91	1
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	100	102	2
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	6.75	7.21	7	<0.01	<0.01	0	6.1	6.87	12	13	13.2	2	1270	1240	2

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are:
30 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		Lab Report Number	EM2125903	852797		EM2125903	852797		EM2122518	841785		EM2122518	841785		EM2122518	841785	
		Field ID	0445_MW342_211222	0445_QC200_211222	RPD	0445_MW307_211222	0445_QC201_211222	RPD	0445_MW051_211110	QC200_211110	RPD	0445_MW319_211110	QC201_211110	RPD	0445_MW329_21110	QC202_211110	RPD
		Sampled Date/Time	22/12/2021	22/12/2021		22/12/2021	22/12/2021		11/11/2021 8:07	11/11/2021 8:07		10/11/2021 10:55	10/11/2021 10:55		10/11/2021 14:22	10/11/2021 14:22	
Chem_Group	**ChemName**	**Units**	**LOR**														
	Sum of WA DWER PFAS (n=10)*	µg/L	0.01 : 0.05 (Interlab)	11.8	16.01	30	**1130**	**627.9**	**57**	<0.01	<0.05	0	**0.37**	**0.55**	**39**	0.21	0.23	9
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	**4.15**	**5.8**	**33**	**94.3**	**66**	**35**	<0.01	<0.01	0	**0.28**	**0.39**	**33**	0.03	0.03	0
	Perfluorooctanoate (PFOA)	µg/L	0.01	**0.2**	**0.32**	**46**	**44.2**	**8.9**	**133**	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
	Sum of PFHxS and PFOS	µg/L	0.01	**9.15**	**12.6**	**32**	590	456	26	<0.01	<0.01	0	**0.37**	**0.51**	**32**	0.17	0.19	11
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.94	1.1	16	**107**	**68**	**45**	<0.02	<0.01	0	<0.02	0.01	0	0.04	0.04	0
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	0.78	1	25	97.6	74	28	<0.02	<0.01	0	<0.02	<0.01	0	0.03	0.03	0
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	5	6.8	31	496	390	24	<0.01	<0.01	0	0.09	0.12	29	0.14	0.16	13
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	0.36	0.41	13	**41.2**	**27**	**42**	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.05	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	**0.1**	**0.2**	**67**	**13.4**	**4.5**	**99**	<0.1	<0.05	0	<0.1	<0.05	0	<0.1	<0.05	0
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	0.24	0.3	22	**71.3**	**16**	**127**	<0.02	<0.01	0	<0.02	0.01	0	<0.02	<0.01	0
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	1.1	1.4	24	**170**	**39**	**125**	<0.02	<0.01	0	<0.02	0.02	0	<0.02	<0.01	0
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	0.08	0.09	12	**31.5**	**9.5**	**107**	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	**0.6**	**0.15**	**120**	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.05	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.05	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.05	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.05	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.14	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.05	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.14	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00014	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.14	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.14	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.05	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.05	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	**0.9**	**0.33**	**93**	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	**100**	**26**	**117**	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	**13**	**17.88**	**32**	**1270**	**774.38**	**48**	<0.01	<0.1	0	**0.37**	**0.55**	**39**	0.24	0.28	15

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are:
30 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

	Lab Report Number	EM2122518	841785		EM2122518	841785		EM2122518	841785		EM2122998	842787		EM2122998	842787	
	Field ID	0445_MW404_211111	QC203_211111	RPD	0445_MW042_211111	QC204_211111	RPD	0445_MW350_S_211111	QC205_211111	RPD	0445_SW349_211115	0445_QC206_211115	RPD	0445_SW355_211117	0445_QC207_211117	RPD
	Sampled Date/Time	11/11/2021 14:41	11/11/2021 14:41		12/11/2021 10:21	12/11/2021 10:21		11/11/2021 14:37	11/11/2021 14:37		16/11/2021 8:15	16/11/2021 8:15		17/11/2021 15:50	17/11/2021 15:50	
Chem_Group	**ChemName**	**Units**	**LOR**													
	Sum of WA DWER PFAS (n=10)*	ug/L	0.01 : 0.05 (Interlab)	102	103.04	1	12.6	16.15	25	64.6	86.58	29	1.06	1.43	30	0.36	0.51	34
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	50.2	47	7	3.61	4.3	17	15.3	19	22	**0.61**	**0.84**	**32**	0.22	0.29	27
	Perfluorooctanoate (PFOA)	µg/L	0.01	3.86	3.4	13	0.49	0.65	28	3.05	2.8	9	0.04	0.05	22	**0.01**	**0.02**	**67**
	Sum of PFHxS and PFOS	µg/L	0.01	81.1	84	4	8.66	11.3	26	**48.7**	**69**	**34**	0.82	1.06	26	0.3	0.39	26
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	5.2	4.7	10	0.92	1.2	26	3.62	4	10	0.04	0.04	0	<0.02	0.02	0
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	**3.16**	**4.6**	**37**	1.13	0.96	16	**2.6**	**5**	**63**	0.03	0.03	0	<0.02	0.01	0
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	30.9	37	18	**5.05**	**7**	**32**	33.4	50	40	0.21	0.22	5	0.08	0.1	22
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	**2.81**	**1.7**	**49**	0.49	0.57	15	2.86	2.8	2	<0.02	0.01	0	<0.02	<0.01	0
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.04	<0.01	0	<0.02	<0.01	0	<0.04	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	0.8	0.96	18	**0.2**	**0.33**	**49**	**0.6**	**0.95**	**45**	<0.1	0.08	0	<0.1	<0.05	0
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	1.66	1.4	17	0.35	0.36	3	1.39	1.3	7	0.06	0.07	15	**0.02**	**0.03**	**40**
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	7.59	6.9	10	1.62	1.9	16	5.72	7	20	0.08	0.1	22	0.03	0.04	29
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	1.73	1.6	8	0.31	0.32	3	1.16	1.1	5	**0.02**	**0.03**	**40**	<0.02	0.01	0
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.04	0.02	0	<0.02	<0.01	0	<0.04	<0.01	0	<0.02	0.01	0	<0.02	<0.01	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.04	<0.01	0	<0.02	<0.01	0	<0.04	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.04	<0.01	0	<0.02	<0.01	0	<0.04	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.04	<0.01	0	<0.02	<0.01	0	<0.04	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.04	<0.01	0	<0.02	<0.01	0	<0.04	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.1	<0.01	0	<0.05	<0.01	0	<0.09	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.04	<0.05	0	<0.02	<0.05	0	<0.04	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.1	<0.05	0	<0.05	<0.05	0	<0.09	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.0001	<0.00005	0	<0.00005	<0.00005	0	<0.00009	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.1	<0.05	0	<0.05	<0.05	0	<0.09	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.1	<0.05	0	<0.05	<0.05	0	<0.09	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.04	<0.05	0	<0.02	<0.05	0	<0.04	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.04	<0.05	0	<0.02	<0.05	0	<0.04	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	0.06	0.08	29	0.07	0.09	25	0.37	0.43	15	<0.05	<0.05	0	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	108	110.86	3	14.2	18.21	25	70.1	95.78	31	**1.09**	**1.51**	**32**	**0.36**	**0.52**	**36**

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are:
30 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

			Lab Report Number	EM2122999	842787		EM2122998	842787		EM2122998	842787		EM2122998	842787		EM2122998	842787	
			Field ID	0445_SW424_211115	0445_QC208_211115	RPD	0445_SW382_211116	0445_QC209_211116	RPD	0445_SW324_211117	0445_QC210_211117	RPD	0445_SW313_211117	0445_QC211_211117	RPD	0445_SW321_211117	0445_QC212_211117	RPD
			Sampled Date/Time	16/11/2021 8:05	16/11/2021 8:05		17/11/2021 7:53	17/11/2021 7:53		17/11/2021 8:31	17/11/2021 8:31		17/11/2021 8:58	17/11/2021 8:58		17/11/2021 8:51	17/11/2021 8:51	
Chem_Group	**ChemName**	**Units**	**LOR**															
	Sum of WA DWER PFAS (n=10)*	µg/L	0.01 : 0.05 (Interlab)	**1.32**	**2.12**	**47**	<0.01	<0.05	0	**3.09**	**4.23**	**31**	5.79	7.73	29	**6.49**	**11.2**	**53**
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	**0.76**	**1.1**	**37**	<0.01	<0.01	0	**1.86**	**2.6**	**33**	**3.13**	**4.5**	**36**	**3.48**	**7.5**	**73**
	Perfluorooctanoate (PFOA)	µg/L	0.01	0.03	0.04	29	<0.01	<0.01	0	0.1	0.11	10	0.3	0.35	15	0.09	0.11	20
	Sum of PFHxS and PFOS	µg/L	0.01	**1.16**	**1.83**	**45**	<0.01	<0.01	0	**2.61**	**3.6**	**32**	**4.43**	**6.1**	**32**	**5.8**	**10.3**	**56**
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.04	0.03	29	<0.02	<0.01	0	0.06	0.05	18	0.1	0.08	22	0.16	0.18	12
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	**0.02**	**0.05**	**86**	<0.02	<0.01	0	0.05	0.06	18	0.06	0.08	29	**0.16**	**0.26**	**48**
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	**0.4**	**0.73**	**58**	<0.01	<0.01	0	0.75	1	29	1.3	1.6	21	2.32	2.8	19
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	**0.02**	**0.03**	**40**	<0.02	<0.01	0	0.04	0.05	22	0.07	0.08	13	0.1	0.13	26
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	0.06	0	<0.1	<0.05	0	<0.1	0.1	0	**0.1**	**0.23**	**79**	<0.1	0.06	0
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.04	29	<0.02	<0.01	0	0.1	0.11	10	0.31	0.32	3	0.06	0.06	0
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	**0.06**	**0.1**	**50**	<0.02	<0.01	0	0.17	0.21	21	0.44	0.53	19	0.35	0.45	25
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	0.02	0	<0.02	<0.01	0	0.05	0.05	0	0.11	0.12	9	0.03	0.04	29
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	0.02	0.02	0	0.18	0.18	0	<0.02	<0.01	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	0.01	0	<0.02	<0.01	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	**1.36**	**2.22**	**48**	<0.01	<0.1	0	**3.2**	**4.43**	**32**	6.1	8.14	29	**6.75**	**11.64**	**53**

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are:
30 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

			Lab Report Number	EM2122518	EM2122518	EM2122518	EM2122518	EM2122518	EM2122998	EM2122998	EM2122998	EM2125903
			Field ID	0445_QC300_211108	0445_QC301_211109	0445_QC305_211111	0445_QC304_211110	0445_QC308_211112	0445_QC310_211115	0445_QC311_211116	0445_QC314_211117	0445_QC301_211222
			Sampled_Date/Time	8/11/2021 11:25	9/11/2021 11:26	11/11/2021 11:33	10/11/2021 11:40	12/11/2021 15:00	17/11/2021	16/11/2021	17/11/2021	22/12/2021
			Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
Chem_Group	**ChemName**	**Units**	**LOR**									
	Sum of WA DWER PFAS (n=10)*	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	0.00005	<5e-005	<5e-005	<5e-005	<5e-005	<5e-005	<5e-005	<5e-005	<5e-005	<5e-005
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

			Lab Report Number	EM2122518	EM2122518	EM2122998	EM2122998	EM2125903
			Field ID	0445_QC500_211108	0445_QC501_211109	0445_QC503_211115	0445_QC504_211116	0445_QC500_211221
			Sampled_Date/Time	8/11/2021 15:00	9/11/2021 15:00	15/11/2021	16/11/2021 14:47	22/12/2021
			Sample Type	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B
Chem_Group	**ChemName**	**Units**	**LOR**					
	Sum of WA DWER PFAS (n=10)*	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	0.00005	<5e-005	<5e-005	<5e-005	<5e-005	<5e-005
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

APPENDIX

C

LABORATORY CERTIFICATES

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2122518**	Page	: 1 of 19
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 15-Nov-2021 12:15
Order number	: -	Date Analysis Commenced	: 18-Nov-2021
C-O-C number	: 29841	Issue Date	: 22-Nov-2021 10:56
Sampler	: [redacted]		
Site	: Base		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 41		
No. of samples analysed	: 37		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X: Samples (EM2122518) required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: **GROUNDWATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0445_MW012_211111	0445_MW029_211111 Extra containers for QC	0445_MW042_211111	0445_MW051_211110	0445_MW056_211111
				Sampling date / time	12-Nov-2021 10:20	11-Nov-2021 14:35	12-Nov-2021 10:21	11-Nov-2021 08:07	11-Nov-2021 11:46
					EM2122518-001	EM2122518-002	EM2122518-003	EM2122518-004	EM2122518-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.13**	**0.92**	<0.02	**0.18**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.13**	**1.13**	<0.02	**0.19**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.36**	**0.71**	**5.05**	<0.01	**0.80**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.02**	**0.49**	<0.02	**0.07**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	**0.44**	**3.61**	<0.01	**0.70**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**0.2**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.16**	**0.35**	<0.02	**0.02**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.25**	**1.62**	<0.02	**0.14**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.08**	**0.31**	<0.02	**0.07**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.06**	**0.49**	<0.01	**0.15**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW012_211111	0445_MW029_211111 Extra containers for QC	0445_MW042_211111	0445_MW051_211110	0445_MW056_211111
				Sampling date / time	12-Nov-2021 10:20	11-Nov-2021 14:35	12-Nov-2021 10:21	11-Nov-2021 08:07	11-Nov-2021 11:46
Compound	CAS Number	LOR	Unit		EM2122518-001	EM2122518-002	EM2122518-003	EM2122518-004	EM2122518-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**0.07**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.43**	**1.98**	**14.2**	<0.01	**2.32**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.43**	**1.15**	**8.66**	<0.01	**1.50**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.43**	**1.83**	**12.6**	<0.01	**2.06**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	**95.7**	**93.8**	**94.7**	**90.2**
13C8-PFOA	----	0.02	%		**98.7**	**104**	**102**	**99.0**	**99.8**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW304_211110	0445_MW307_211110	0445_MW312_21110	0445_MW319_211110	0445_MW321_211110
			Sampling date / time	10-Nov-2021 10:49	11-Nov-2021 08:06	10-Nov-2021 15:25	10-Nov-2021 10:55	10-Nov-2021 10:47
Compound	CAS Number	LOR	Unit	EM2122518-006	EM2122518-007	EM2122518-008	EM2122518-009	EM2122518-010
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**87.7**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**61.2**	**0.02**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	**352**	**0.14**	**0.09**	**0.19**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**28.4**	<0.02	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.02**	**70.4**	**0.02**	**0.28**	**0.73**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.04	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	**7.1**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	**57.5**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**140**	**0.04**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**23.0**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	**34.2**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	**0.48**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.04	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.04	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.04	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.04	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.09	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.04	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.09	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.09	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW304_211110	0445_MW307_211110	0445_MW312_21110	0445_MW319_211110	0445_MW321_211110
				Sampling date / time	10-Nov-2021 10:49	11-Nov-2021 08:06	10-Nov-2021 15:25	10-Nov-2021 10:55	10-Nov-2021 10:47
Compound	CAS Number	LOR	Unit		EM2122518-006	EM2122518-007	EM2122518-008	EM2122518-009	EM2122518-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.09	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.09	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.04	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.04	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	**0.90**	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**65.4**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.02**	**928**	**0.22**	**0.37**	**0.96**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	**422**	**0.16**	**0.37**	**0.92**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	**837**	**0.20**	**0.37**	**0.92**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.1**	**102**	**87.8**	**106**	**114**
13C8-PFOA	----	0.02	%		**102**	**88.2**	**100**	**102**	**101**

Analytical Results

Sub-Matrix: **GROUNDWATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0445_MW323_211110	0445_MW326_211110	0445_MW329_21110	0445_MW342_211111	0445_MW350_D_211111 Extra containers for QC
				Sampling date / time	10-Nov-2021 13:52	10-Nov-2021 13:54	10-Nov-2021 14:22	11-Nov-2021 10:05	11-Nov-2021 14:39
					EM2122518-011	EM2122518-012	EM2122518-013	EM2122518-014	EM2122518-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.46**	**0.04**	**0.88**	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.11**	**0.03**	**0.53**	**0.03**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.26**	**0.14**	**4.31**	**0.27**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.36**	**0.02**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.03**	**0.03**	**9.21**	**0.33**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.05**	<0.02	**0.24**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.10**	<0.02	**0.95**	**0.06**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.08**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.22**	**0.02**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **GROUNDWATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0445_MW323_211110	0445_MW326_211110	0445_MW329_21110	0445_MW342_211111	0445_MW350_D_211111 Extra containers for QC
				Sampling date / time	10-Nov-2021 13:52	10-Nov-2021 13:54	10-Nov-2021 14:22	11-Nov-2021 10:05	11-Nov-2021 14:39
					EM2122518-011	EM2122518-012	EM2122518-013	EM2122518-014	EM2122518-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**1.01**	**0.24**	**16.8**	**0.77**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.29**	**0.17**	**13.5**	**0.60**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.90**	**0.21**	**15.9**	**0.72**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.1**	**99.3**	**97.8**	**97.4**	**101**
13C8-PFOA	----	0.02	%		**103**	**101**	**102**	**100**	**100**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW350_S_211111	0445_MW353_211111	0445_MW403_211111	0445_MW404_211111	0445_QC102_211110
				Sampling date / time	11-Nov-2021 14:37	12-Nov-2021 10:28	12-Nov-2021 10:22	11-Nov-2021 14:41	10-Nov-2021 14:24
Compound	CAS Number	LOR	Unit		EM2122518-016	EM2122518-017	EM2122518-018	EM2122518-019	EM2122518-023
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**3.62**	**0.46**	**5.04**	**5.20**	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.60**	**0.43**	**5.46**	**3.16**	**0.03**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**33.4**	**3.20**	**41.6**	**30.9**	**0.14**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**2.86**	**0.26**	**3.48**	**2.81**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**15.3**	**3.85**	**52.3**	**50.2**	**0.03**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.04	<0.02	<0.04	<0.04	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.6**	<0.1	**1.1**	**0.8**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.39**	**0.13**	**2.23**	**1.66**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**5.72**	**0.53**	**9.86**	**7.59**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.16**	**0.11**	**1.69**	**1.73**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**3.05**	**0.22**	**4.41**	**3.86**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.04	<0.02	**0.05**	<0.04	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.04	<0.02	<0.04	<0.04	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.04	<0.02	<0.04	<0.04	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.04	<0.02	<0.04	<0.04	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.04	<0.02	<0.04	<0.04	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.09	<0.05	<0.10	<0.10	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.04	<0.02	<0.04	<0.04	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.09	<0.05	<0.10	<0.10	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.09	<0.05	<0.10	<0.10	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW350_S_211111	0445_MW353_211111	0445_MW403_211111	0445_MW404_211111	0445_QC102_211110
				Sampling date / time	11-Nov-2021 14:37	12-Nov-2021 10:28	12-Nov-2021 10:22	11-Nov-2021 14:41	10-Nov-2021 14:24
Compound	CAS Number	LOR	Unit		EM2122518-016	EM2122518-017	EM2122518-018	EM2122518-019	EM2122518-023
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.09	<0.05	<0.10	<0.10	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.09	<0.05	<0.10	<0.10	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.04	<0.02	<0.04	<0.04	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.04	<0.02	<0.04	<0.04	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.37**	<0.05	**1.41**	**0.06**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**70.1**	**9.19**	**129**	**108**	**0.24**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**48.7**	**7.05**	**93.9**	**81.1**	**0.17**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**64.6**	**8.50**	**120**	**102**	**0.21**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**91.5**	**92.4**	**96.2**	**94.2**
13C8-PFOA	----	0.02	%		**103**	**99.3**	**102**	**100**	**99.7**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_QC103_211111	0445_QC105_211111	0445_QC104_211111	0445_QC101_211110	0445_QC100_211110
			Sampling date / time	11-Nov-2021 14:38	11-Nov-2021 14:43	12-Nov-2021 10:30	12-Nov-2021 10:37	12-Nov-2021 10:52
Compound	CAS Number	LOR	Unit	EM2122518-024	EM2122518-025	EM2122518-026	EM2122518-027	EM2122518-028
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**5.33**	**3.65**	**0.99**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**2.88**	**2.70**	**0.81**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**28.4**	**33.7**	**5.49**	**0.08**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**2.75**	**2.91**	**0.38**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**40.9**	**15.2**	**3.30**	**0.31**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.04	<0.04	<0.04	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**1.1**	**0.9**	<0.2	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**1.74**	**1.45**	**0.33**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**7.32**	**5.86**	**1.52**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**1.86**	**1.24**	**0.24**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**3.96**	**3.06**	**0.46**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.04	<0.04	<0.04	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.04	<0.04	<0.04	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.04	<0.04	<0.04	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.04	<0.04	<0.04	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.04	<0.04	<0.04	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.11	<0.09	<0.09	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.04	<0.04	<0.04	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.11	<0.09	<0.09	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.11	<0.09	<0.09	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_QC103_211111	0445_QC105_211111	0445_QC104_211111	0445_QC101_211110	0445_QC100_211110
				Sampling date / time	11-Nov-2021 14:38	11-Nov-2021 14:43	12-Nov-2021 10:30	12-Nov-2021 10:37	12-Nov-2021 10:52
Compound	CAS Number	LOR	Unit		EM2122518-024	EM2122518-025	EM2122518-026	EM2122518-027	EM2122518-028
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.11	<0.09	<0.09	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.11	<0.09	<0.09	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.04	<0.04	<0.04	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.04	<0.04	<0.04	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.06**	**0.29**	**0.05**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**96.3**	**71.0**	**13.6**	**0.39**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**69.3**	**48.9**	**8.79**	**0.39**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**90.7**	**65.4**	**12.4**	**0.39**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.2**	**113**	**104**	**95.6**	**103**
13C8-PFOA	----	0.02	%		**105**	**107**	**96.6**	**103**	**103**

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)			Sample ID	0445_QC300_211108	0445_QC301_211109	0445_QC305_211111	0445_QC304_211110	----
			Sampling date / time	08-Nov-2021 11:25	09-Nov-2021 11:26	11-Nov-2021 11:33	10-Nov-2021 11:40	----
Compound	CAS Number	LOR	Unit	EM2122518-029	EM2122518-030	EM2122518-033	EM2122518-034	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)				Sample ID	0445_QC300_211108	0445_QC301_211109	0445_QC305_211111	0445_QC304_211110	----
				Sampling date / time	08-Nov-2021 11:25	09-Nov-2021 11:26	11-Nov-2021 11:33	10-Nov-2021 11:40	----
Compound	CAS Number	LOR	Unit		EM2122518-029	EM2122518-030	EM2122518-033	EM2122518-034	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.4**	**101**	**91.7**	**102**	----
13C8-PFOA	----	0.02	%		**102**	**104**	**99.6**	**102**	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW338_211109 extra containers for lab QC	0445_SW340_211109 extra containers for lab QC	0445_SW380_211108	----	----
			Sampling date / time	10-Nov-2021 11:43	10-Nov-2021 11:47	10-Nov-2021 11:40	----	----
Compound	CAS Number	LOR	Unit	EM2122518-020	EM2122518-021	EM2122518-022	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.09**	**0.26**	**0.06**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	**0.21**	**0.02**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.25**	**1.66**	**0.09**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.11**	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**1.06**	**4.20**	**0.34**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	**0.2**	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.04**	**0.28**	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.16**	**0.44**	**0.08**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.02**	**0.10**	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.05**	**0.15**	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW338_211109 extra containers for lab QC	0445_SW340_211109 extra containers for lab QC	0445_SW380_211108	----	----
				Sampling date / time	10-Nov-2021 11:43	10-Nov-2021 11:47	10-Nov-2021 11:40	----	----
Compound	CAS Number	LOR	Unit		EM2122518-020	EM2122518-021	EM2122518-022	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.70**	**7.61**	**0.59**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.31**	**5.86**	**0.43**	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.67**	**7.29**	**0.57**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.9**	**110**	**108**	----	----
13C8-PFOA	----	0.02	%		**102**	**98.7**	**102**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0445_SW462_211111	0445_QC500_211108	0445_QC501_211109	0445_QC308_211112	0445_SW390_211109
			Sampling date / time	11-Nov-2021 00:00	08-Nov-2021 00:00	09-Nov-2021 00:00	12-Nov-2021 00:00	09-Nov-2021 00:00
Compound	CAS Number	LOR	Unit	EM2122518-035	EM2122518-036	EM2122518-037	EM2122518-040	EM2122518-041
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.11**	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.08**	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445_SW462_211111	0445_QC500_211108	0445_QC501_211109	0445_QC308_211112	0445_SW390_211109
				Sampling date / time	11-Nov-2021 00:00	08-Nov-2021 00:00	09-Nov-2021 00:00	12-Nov-2021 00:00	09-Nov-2021 00:00
Compound	CAS Number	LOR	Unit		EM2122518-035	EM2122518-036	EM2122518-037	EM2122518-040	EM2122518-041
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.26**	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.19**	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.24**	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**115**	**106**	**109**	**99.4**	**96.0**
13C8-PFOA	----	0.02	%		**106**	**102**	**105**	**105**	**104**

Surrogate Control Limits

Sub-Matrix: GROUNDWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: RINSATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: SURFACE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2122518**

Client	: [redacted]	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: VIC_0445_PFASOMP	Page	: 1 of 3
Order number	: -	Quote number	: EM2021LANECON0009 (SY/139/19_Bandiana)
C-O-C number	: 29841	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Base		
Sampler	: [redacted]		

Dates

Date Samples Received	: 15-Nov-2021 12:15	Issue Date	: 18-Nov-2021
Client Requested Due Date	: 22-Nov-2021	Scheduled Reporting Date	: **22-Nov-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 3.4°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 41 / 37

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM2122518-002	: 11-Nov-2021 14:35	: 0445_MW029_211111 - Extra containers for QC
EM2122518-015	: 11-Nov-2021 14:39	: 0445_MW350_D_211111 - Extra containers for QC
EM2122518-020	: 10-Nov-2021 11:43	: 0445_SW338_211109 - extra containers for lab QC
EM2122518-021	: 10-Nov-2021 11:47	: 0445_SW340_211109 - extra containers for lab QC

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2122518-001	12-Nov-2021 10:20	0445_MW012_211111		✓
EM2122518-002	11-Nov-2021 14:35	0445_MW029_211111 E...		✓
EM2122518-003	12-Nov-2021 10:21	0445_MW042_211111		✓
EM2122518-004	11-Nov-2021 08:07	0445_MW051_211110		✓
EM2122518-005	11-Nov-2021 11:46	0445_MW056_211111		✓
EM2122518-006	10-Nov-2021 10:49	0445_MW304_211110		✓
EM2122518-007	11-Nov-2021 08:06	0445_MW307_211110		✓
EM2122518-008	10-Nov-2021 15:25	0445_MW312_21110		✓
EM2122518-009	10-Nov-2021 10:55	0445_MW319_211110		✓
EM2122518-010	10-Nov-2021 10:47	0445_MW321_211110		✓
EM2122518-011	10-Nov-2021 13:52	0445_MW323_211110		✓
EM2122518-012	10-Nov-2021 13:54	0445_MW326_211110		✓
EM2122518-013	10-Nov-2021 14:22	0445_MW329_21110		✓
EM2122518-014	11-Nov-2021 10:05	0445_MW342_211111		✓
EM2122518-015	11-Nov-2021 14:39	0445_MW350_D_211111 ..		✓
EM2122518-016	11-Nov-2021 14:37	0445_MW350_S_211111		✓
EM2122518-017	12-Nov-2021 10:28	0445_MW353_211111		✓
EM2122518-018	12-Nov-2021 10:22	0445_MW403_211111		✓
EM2122518-019	11-Nov-2021 14:41	0445_MW404_211111		✓
EM2122518-020	10-Nov-2021 11:43	0445_SW338_211109 e...		✓
EM2122518-021	10-Nov-2021 11:47	0445_SW340_211109 e...		✓
EM2122518-022	10-Nov-2021 11:40	0445_SW380_211108		✓
EM2122518-023	10-Nov-2021 14:24	0445_QC102_211110		✓
EM2122518-024	11-Nov-2021 14:38	0445_QC103_211111		✓
EM2122518-025	11-Nov-2021 14:43	0445_QC105_211111		✓
EM2122518-026	12-Nov-2021 10:30	0445_QC104_211111		✓
EM2122518-027	12-Nov-2021 10:37	0445_QC101_211110		✓
EM2122518-028	12-Nov-2021 10:52	0445_QC100_211110		✓
EM2122518-029	08-Nov-2021 11:25	0445_QC300_211108		✓
EM2122518-030	09-Nov-2021 11:26	0445_QC301_211109		✓
EM2122518-031	09-Nov-2021 11:28	0445_QC302_211109	✓	

			(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2122518-032	10-Nov-2021 11:30	0445_QC303_211110	✓	
EM2122518-033	11-Nov-2021 11:33	0445_QC305_211111		✓
EM2122518-034	10-Nov-2021 11:40	0445_QC304_211110		✓
EM2122518-035	11-Nov-2021 00:00	0445_SW462_211111		✓
EM2122518-036	08-Nov-2021 00:00	0445_QC500_211108		✓
EM2122518-037	09-Nov-2021 00:00	0445_QC501_211109		✓
EM2122518-038	11-Nov-2021 00:00	0445_QC306_211111	✓	
EM2122518-039	12-Nov-2021 00:00	0445_QC307_211112	✓	
EM2122518-040	12-Nov-2021 00:00	0445_QC308_211112		✓
EM2122518-041	09-Nov-2021 00:00	0445_SW390_211109		✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

ALL INVOICES

- A4 - AU Tax Invoice (INV) Email

DERP LAB REPORTS

- EDI Format - ESDAT (ESDAT) Email

[redacted]

CHAIN OF CUSTODY

ALS COC#: 29841 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

EMAIL REPORTS TO:

EMAIL INVOICES TO:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SCANNED

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_MW012_211111		12/11/2021 10:20 AM	Water	ALS: 2 Non ALS: 0	No	X		
002	0445_MW029_211111	Extra containers for QC	11/11/2021 02:35 PM	Water	ALS: 6 Non ALS: 0	No	X		
003	0445_MW042_211111		12/11/2021 10:21 AM	Water	ALS: 2 Non ALS: 0	No	X		
004	0445_MW051_211110		11/11/2021 08:07 AM	Water	ALS: 2 Non ALS: 0	No	X		
005	0445_MW056_211111		11/11/2021 11:46 AM	Water	ALS: 2 Non ALS: 0	No	X		
006	0445_MW304_211110		10/11/2021 10:49 AM	Water	ALS: 2 Non ALS: 0	No	X		
007	0445_MW307_211110		11/11/2021 08:06 AM	Water	ALS: 2 Non ALS: 0	No	X		
008	0445_MW312_21110		10/11/2021 03:25 PM	Water	ALS: 2 Non ALS: 0	No	X		
009	0445_MW319_211110		10/11/2021 10:55 AM	Water	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2122518

Telephone : +61-3-8549 9600

Received: 15/11 12:15 Carrier:

C/note:

Temp: 3.4 °C Sent: Y (N)

(Ice) / Icebricks / NA

Received at
Sample Receipt
Date 16/11

FO
16/11

CHAIN OF CUSTODY

ALS COC#: 29841 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_MW321_211110		10/11/2021 10:47 AM	Water	ALS: 2 Non ALS: 0	No	X		
011	0445_MW323_211110		10/11/2021 01:52 PM	Water	ALS: 2 Non ALS: 0	No	X		
012	0445_MW326_211110		10/11/2021 01:54 PM	Water	ALS: 2 Non ALS: 0	No	X		
013	0445_MW329_21110		10/11/2021 02:22 PM	Water	ALS: 2 Non ALS: 0	No	X		
014	0445_MW342_211111		11/11/2021 10:05 AM	Water	ALS: 2 Non ALS: 0	No	X		
015	0445_MW350_D_211111	Extra containers for QC	11/11/2021 02:39 PM	Water	ALS: 6 Non ALS: 0	No	X		
016	0445_MW350_S_211111		11/11/2021 02:37 PM	Water	ALS: 2 Non ALS: 0	No	X		
017	0445_MW353_211111		12/11/2021 10:28 AM	Water	ALS: 2 Non ALS: 0	No	X		
018	0445_MW403_211111		12/11/2021 10:22 AM	Water	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 29841 ALS Laboratory: EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
019	0445_MW404_211111		11/11/2021 02:41 PM	Water	ALS: 2 Non ALS: 0	No	X		
020	0445_SW338_211109	extra containers for lab QC	10/11/2021 11:43 AM	Water	ALS: 6 Non ALS: 0	No	X		
021	0445_SW340_211109	extra containers for lab QC	10/11/2021 11:47 AM	Water	ALS: 6 Non ALS: 0	No	X		
022	0445_SW380_211108		10/11/2021 11:40 AM	Water	ALS: 2 Non ALS: 0	No	X		
023	0445_QC102_211110		10/11/2021 02:24 PM	Water	ALS: 2 Non ALS: 0	No	X		
024	0445_QC103_211111		11/11/2021 02:38 PM	Water	ALS: 2 Non ALS: 0	No	X		
025	0445_QC105_211111		11/11/2021 02:43 PM	Water	ALS: 2 Non ALS: 0	No	X		
026	0445_QC104_211111		12/11/2021 10:30 AM	Water	ALS: 2 Non ALS: 0	No	X		
027	0445_QC101_211110		12/11/2021 10:37 AM	Water	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 29841 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
028	0445_QC100_211110		12/11/2021 10:52 AM	Water	ALS: 2 Non ALS: 0	No	X		
029	0445_QC300_211108		08/11/2021 11:25 AM	Water	ALS: 2 Non ALS: 0	No	X		
030	0445_QC301_211109		09/11/2021 11:26 AM	Water	ALS: 2 Non ALS: 0	No	X		
031	0445_QC302_211109		09/11/2021 11:28 AM	Water	ALS: 2 Non ALS: 0	No	X		
032	0445_QC303_211110		10/11/2021 11:30 AM	Water	ALS: 2 Non ALS: 0	No	X		
033	0445_QC305_211111		11/11/2021 11:33 AM	Water	ALS: 2 Non ALS: 0	No	X		
034	0445_QC304_211110		10/11/2021 11:40 AM	Water	ALS: 2 Non ALS: 0	No	X		

Extra:

#35: SW462

#36 QC500 8/11

#37: QC501 9/11

#38 = QC306 11/11

#39: QC307 12/11

#40: QC308 12/11

#41: SW390

Felix Dong

From: [redacted]
Sent: Thursday, 18 November 2021 12:11 PM
To: [redacted]
Cc:
Subject: [EXTERNAL] - FW: SRN for ALS Workorder : EM2122518 | Your Reference: VIC_0445 _PFASOMP
Attachments: EM2122518_0_SRN_211117111844.pdf; EM2122518_COC.pdf; EM2122518_COC_1.pdf

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi [redacted]

Thanks for sending this through, can I please have the following samples put on hold:

- 0445_QC302_211109
- 0445_QC303_211110
- 0445_QC306_211111
- 0445_QC307_211112

Also [redacted] has submitted the final Compass COCs this morning. Can I please request a courier to pick up 2 eskies of samples from 501 Swanston Street anytime after 2:30pm this afternoon (please make sure this timing is passed onto the couriers as I will not be at the office until then).

Any issues please let me know.

[redacted]
ENVIRONMENTAL ENGINEER
CARDNO

Cardno

[redacted]

Email [redacted] Web www.cardno.com.au

CONNECT WITH CARDNO

Cardno acknowledges the Traditional Owners of the land upon which we live and work and pay our respects to their Elders past, present and emerging - learn more.

Cardno's management systems are certified to ISO9001 (quality) and AS4801/OHSAS18001 (occupational health and safety)

This email and its attachments may contain confidential and/or privileged information for the sole use of the intended recipient(s). All electronically supplied data must be checked against an applicable hardcopy version which shall be the only document which Cardno warrants accuracy. If you are not the intended recipient, any use, distribution or copying of the information contained in this email and its attachments is strictly prohibited. If you have received this email in error, please email the sender by replying to this message and immediately delete and destroy any copies of this email and any attachments. The views or opinions expressed are the author's own and may not reflect the views or opinions of Cardno.

From: [redacted]
Sent: Wednesday, 17 November 2021 11:19 AM
To: [redacted]
Subject: SRN for ALS Workorder : EM2122518 | Your Reference: VIC_0445_PFASOMP

Deliverables for ALS Workorder EM2122518

Project: VIC_0445_PFASOMP

Dear [redacted],

Please find enclosed the following deliverables for **EM2122518**:

- EM2122518_0_SRN_211117111844.pdf
- EM2122518_COC.pdf
- EM2122518_COC_1.pdf

Report Recipients

- [redacted]
  - EM2122518_0_SRN_211117111844.pdf (Email)
  - EM2122518_COC.pdf (Email)
  - EM2122518_COC_1.pdf (Email)

Felix Dong

From: [redacted]
Sent: Wednesday, 17 November 2021 11:05 AM
To: Samples Melbourne; [redacted]
Subject: FW: [EXTERNAL] - RE: EM2122518 - LANECON - VIC_0445_PFASOMP

See below. Please reissue SRN.

Kind Regards

[redacted]
Senior Project Manager, Life Sciences
Asia Pacific

Please note that **my office hours are 9:00am - 3:00pm Monday to Friday**. For assistance outside of this time please contact [redacted] Please forward CoCs to [redacted]

T [redacted]
F [redacted]
[redacted]

Subscribe

EnviroMail™ 00 – All EnviroMails™ in one convenient library.

EnviroMail™ 135 – New Analytical Suites to meet EPA Victoria 1828.2 Guideline
EnviroMail™ 134 – ALS Australia Dioxin Capability
EnviroMail™ 133 – Sampling and Analysis of air and gas using canisters
EnviroMail™ 132 – BIOSOLIDS: PFAS, TOP Assay & TOF
EnviroMail™ 131 – Important Changes to the Australian Standard Leaching Procedures AS4439.2 & AS4439.3

ALSCompass SAMPLING *Intelligence*

See how ALS is making sampling easier! Register your interest here.

Navigating ALS Compass – https://youtu.be/UgxjZswyI6g
How to Create a Project - https://youtu.be/xg07UpuPLMo
How to Create a COC - https://youtu.be/TI29pSgeYAA
How to Begin Sample Collection - https://youtu.be/7bUgYqAHYFo

Right Solutions · Right Partner
www.alsglobal.com

From: [redacted]
Sent: Wednesday, 17 November 2021 10:59 AM
To: [redacted]
Subject: [EXTERNAL] - RE: EM2122518 - LANECON - VIC_0445_PFASOMP

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Thanks [redacted]

Can you please amend the IDs as per below and schedule the samples for PFAS analysis.

Can you also please send through the Sample Receipt COC when you get the chance?

Kind Regards,

[redacted]
ENVIRONMENTAL ENGINEER
CARDNO

Cardno

Phone Direct [redacted]
Address [redacted]

Email [redacted]

CONNECT WITH CARDNO

Cardno acknowledges the Traditional Owners of the land upon which we live and work and pay our respects to their Elders past, present and emerging - learn more.

Cardno's management systems are certified to ISO9001 (quality) and AS4801/OHSAS18001 (occupational health and safety)

This email and its attachments may contain confidential and/or privileged information for the sole use of the intended recipient(s). All electronically supplied data must be checked against an applicable hardcopy version which shall be the only document which Cardno warrants accuracy. If you are not the intended recipient, any use, distribution or copying of the information contained in this email and its attachments is strictly prohibited. If you have received this email in error, please email the sender by replying to this message and immediately delete and destroy any copies of this email and any attachments. The views or opinions expressed are the author's own and may not reflect the views or opinions of Cardno.

From: [redacted]
Sent: Wednesday, 17 November 2021 9:57 AM
To: [redacted]
Subject: FW: EM2122518 - LANECON - VIC_0445_PFASOMP

Feedback from Sample Receipt

Kind Regards

[redacted]
Senior Project Manager, Life Sciences
Asia Pacific

Please note that **my office hours are 9:00am – 3:00pm Monday to Friday**. For assistance outside of this time please contact [redacted] Please forward CoCs to [redacted]

T [redacted]
F [redacted]
[redacted]

Subscribe

EnviroMail™ 00 – All EnviroMails™ in one convenient library.

EnviroMail™ 135 – New Analytical Suites to meet EPA Victoria 1828.2 Guideline
EnviroMail™ 134 – ALS Australia Dioxin Capability
EnviroMail™ 133 – Sampling and Analysis of air and gas using canisters
EnviroMail™ 132 – BIOSOLIDS: PFAS, TOP Assay & TOF
EnviroMail™ 131 – Important Changes to the Australian Standard Leaching Procedures AS4439.2 & AS4439.3

ALSCompass SAMPLING *Intelligence*

See how ALS is making sampling easier! Register your interest here.

Navigating ALS Compass – https://youtu.be/UgxjZswyI6g
How to Create a Project - https://youtu.be/xg07UpuPLMo
How to Create a COC - https://youtu.be/TI29pSgeYAA
How to Begin Sample Collection - https://youtu.be/7bUgYqAHYFo

Right Solutions · Right Partner
www.alsglobal.com

From: [redacted]
Sent: Tuesday, 16 November 2021 4:40 PM
To: [redacted]
Cc: [redacted]
Subject: EM2122518 - LANECON - VIC_0445_PFASOMP

Hi [redacted]

Extra samples received and batched as:

#35: 0445_SW462_211111 11/11
#36: 0445_QC500_211108 08/11
#37: 0445_QC501_211109 9/11
#38: 0445_QC306_211111 11/11
#39: 0445_QC307_211112 12/11
#40: 0445_QC308_211112 12/11
#41: 0445_SW390_211109

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2122518**	Page	: 1 of 11
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 15-Nov-2021
Order number	: -	Date Analysis Commenced	: 18-Nov-2021
C-O-C number	: 29841	Issue Date	: 22-Nov-2021
Sampler	: [redacted]		
Site	: Base		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 41		
No. of samples analysed	: 37		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4024232)									
EM2122518-020	0445_SW338_211109 extra containers for lab QC	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.25	0.26	0.0	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	1.06	0.98	7.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.09	0.15	48.4	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EM2122518-011	0445_MW323_211110	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4025379)									
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	1.66	1.54	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.20	4.35	3.7	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.26	0.28	7.3	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.21	0.20	6.4	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.11	0.11	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EM2122518-041	0445_SW390_211109	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4025379) - continued									
EM2122518-041	0445_SW390_211109	EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4024232)									
EM2122518-020	0445_SW338_211109 extra containers for lab QC	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.16	0.16	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EM2122518-011	0445_MW323_211110	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4025379)									
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.15	0.16	0.0	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.28	0.28	0.0	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.44	0.42	4.7	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.10	0.10	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.2	0.1	69.9	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4025379) - continued									
EM2122518-041	0445_SW390_211109	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4024232)									
EM2122518-020	0445_SW338_211109 extra containers for lab QC	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EM2122518-011	0445_MW323_211110	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4025379)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4025379) - continued									
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EM2122518-041	0445_SW390_211109	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4024232)									
EM2122518-020	0445_SW338_211109 extra containers for lab QC	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EM2122518-011	0445_MW323_211110	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4024232) - continued									
EM2122518-011	0445_MW323_211110	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4025379)									
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EM2122518-041	0445_SW390_211109	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4024232)									
EM2122518-020	0445_SW338_211109 extra containers for lab QC	EP231X: Sum of PFAS	----	0.01	µg/L	1.70	1.69	0.6	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.31	1.24	5.5	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	1.67	1.65	1.2	0% - 20%
EM2122518-011	0445_MW323_211110	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4025379)									
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: Sum of PFAS	----	0.01	µg/L	7.61	7.54	0.9	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	5.86	5.89	0.5	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	7.29	7.23	0.8	0% - 20%
EM2122518-041	0445_SW390_211109	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4024232)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	101	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	103	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	104	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	98.0	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	104	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	89.4	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4025379)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	94.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	90.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	89.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	80.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	88.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	79.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4024232)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	99.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	95.9	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	96.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	92.9	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	113	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	98.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.4	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.9375 µg/L	118	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4025379)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	92.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.3	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	92.3	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	90.9	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	88.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	99.2	69.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4025379) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	89.5	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	87.5	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.9375 µg/L	104	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4024232)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	102	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	127	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	119	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	99.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.8	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	133	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	110	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025379)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.1	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	111	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	95.9	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	88.9	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	82.7	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	112	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4024232)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	88.7	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	95.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	106	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	85.7	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4025379)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	83.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	90.5	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	107	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	82.6	70.0	130
EP231P: PFAS Sums (QCLot: 4024232)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 4024232) - continued								
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4025379)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4024232)							
EM2122518-002	0445_MW029_211111 Extra containers for QC	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	105	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	88.3	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	100	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	88.2	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	94.6	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4025379)							
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	83.3	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	108	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	80.5	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	87.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4024232)							
EM2122518-002	0445_MW029_211111 Extra containers for QC	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	95.8	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	95.7	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	94.9	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	98.7	72.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4024232) - continued							
EM2122518-002	0445_MW029_211111 Extra containers for QC	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	97.1	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	91.6	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	93.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	109	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	86.6	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	90.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.9375 µg/L	104	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4025379)							
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	86.7	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	81.9	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	121	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	88.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	82.4	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	86.4	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	83.7	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	100	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	85.5	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.9375 µg/L	90.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4024232)							
EM2122518-002	0445_MW029_211111 Extra containers for QC	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	88.4	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	128	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	103	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	130	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	111	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025379)							
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	82.3	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.0	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	80.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	90.5	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025379) - continued							
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	79.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	115	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	83.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4024232)							
EM2122518-002	0445_MW029_211111 Extra containers for QC	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	84.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	106	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	108	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	75.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4025379)							
EM2122518-021	0445_SW340_211109 extra containers for lab QC	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	85.2	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	86.2	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	101	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	71.6	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2122518**	Page	: 1 of 8
Client	: [redacted]	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 15-Nov-2021
Site	: Base	Issue Date	: 22-Nov-2021
Sampler	: [redacted]	No. of samples received	: 41
Order number	: -	No. of samples analysed	: 37

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EM2122518--002	0445_MW029_211111 Extra c	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EM2122518--021	0445_SW340_211109 extra co	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EM2122518--021	0445_SW340_211109 extra co	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445_QC300_211108,	0445_QC500_211108	**08-Nov-2021**	**19-Nov-2021**	07-May-2022	✓	**19-Nov-2021**	07-May-2022	✓
HDPE (no PTFE) (EP231X)								
0445_QC301_211109, 0445_SW390_211109	0445_QC501_211109,	**09-Nov-2021**	**19-Nov-2021**	08-May-2022	✓	**19-Nov-2021**	08-May-2022	✓
HDPE (no PTFE) (EP231X)								
0445_MW304_211110, 0445_MW319_211110, 0445_MW323_211110, 0445_MW329_21110, 0445_SW340_211109 - extra containers for lab QC, 0445_QC102_211110,	0445_MW312_21110, 0445_MW321_211110, 0445_MW326_211110, 0445_SW338_211109 - extra containers for lab QC, 0445_SW380_211108, 0445_QC304_211110	**10-Nov-2021**	**19-Nov-2021**	09-May-2022	✓	**19-Nov-2021**	09-May-2022	✓
HDPE (no PTFE) (EP231X)								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids - Continued							
0445_MW029_211111 - Extra containers for QC, 0445_MW051_211110, 0445_MW056_211111, 0445_MW307_211110, 0445_MW342_211111, 0445_MW350_D_211111 - Extra containers for QC, 0445_MW350_S_211111, 0445_MW404_211111, 0445_QC103_211111, 0445_QC105_211111, 0445_QC305_211111, 0445_SW462_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW012_211111, 0445_MW042_211111, 0445_MW353_211111, 0445_MW403_211111, 0445_QC104_211111, 0445_QC101_211110, 0445_QC100_211110, 0445_QC308_211112	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0445_QC300_211108, 0445_QC500_211108	**08-Nov-2021**	**19-Nov-2021**	07-May-2022	✓	**19-Nov-2021**	07-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC301_211109, 0445_QC501_211109, 0445_SW390_211109	**09-Nov-2021**	**19-Nov-2021**	08-May-2022	✓	**19-Nov-2021**	08-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW304_211110, 0445_MW312_21110, 0445_MW319_211110, 0445_MW321_211110, 0445_MW323_211110, 0445_MW326_211110, 0445_MW329_21110, 0445_SW338_211109 - extra containers for lab QC, 0445_SW340_211109 - extra containers for lab QC, 0445_SW380_211108, 0445_QC102_211110, 0445_QC304_211110	**10-Nov-2021**	**19-Nov-2021**	09-May-2022	✓	**19-Nov-2021**	09-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW029_211111 - Extra containers for QC, 0445_MW051_211110, 0445_MW056_211111, 0445_MW307_211110, 0445_MW342_211111, 0445_MW350_D_211111 - Extra containers for QC, 0445_MW350_S_211111, 0445_MW404_211111, 0445_QC103_211111, 0445_QC105_211111, 0445_QC305_211111, 0445_SW462_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW012_211111, 0445_MW042_211111, 0445_MW353_211111, 0445_MW403_211111, 0445_QC104_211111, 0445_QC101_211110, 0445_QC100_211110, 0445_QC308_211112	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0445_QC300_211108, 0445_QC500_211108	**08-Nov-2021**	**19-Nov-2021**	07-May-2022	✓	**19-Nov-2021**	07-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC301_211109, 0445_QC501_211109, 0445_SW390_211109	**09-Nov-2021**	**19-Nov-2021**	08-May-2022	✓	**19-Nov-2021**	08-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW304_211110, 0445_MW312_21110, 0445_MW319_211110, 0445_MW321_211110, 0445_MW323_211110, 0445_MW326_211110, 0445_MW329_21110, 0445_SW338_211109 - extra containers for lab QC, 0445_SW340_211109 - extra containers for lab QC, 0445_SW380_211108, 0445_QC102_211110, 0445_QC304_211110	**10-Nov-2021**	**19-Nov-2021**	09-May-2022	✓	**19-Nov-2021**	09-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW029_211111 - Extra containers for QC, 0445_MW051_211110, 0445_MW056_211111, 0445_MW307_211110, 0445_MW342_211111, 0445_MW350_D_211111 - Extra containers for QC, 0445_MW350_S_211111, 0445_MW404_211111, 0445_QC103_211111, 0445_QC105_211111, 0445_QC305_211111, 0445_SW462_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW012_211111, 0445_MW042_211111, 0445_MW353_211111, 0445_MW403_211111, 0445_QC104_211111, 0445_QC101_211110, 0445_QC100_211110, 0445_QC308_211112	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0445_QC300_211108, 0445_QC500_211108	**08-Nov-2021**	**19-Nov-2021**	07-May-2022	✓	**19-Nov-2021**	07-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC301_211109, 0445_QC501_211109, 0445_SW390_211109	**09-Nov-2021**	**19-Nov-2021**	08-May-2022	✓	**19-Nov-2021**	08-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW304_211110, 0445_MW312_21110, 0445_MW319_211110, 0445_MW321_211110, 0445_MW323_211110, 0445_MW326_211110, 0445_MW329_21110, 0445_SW338_211109 - extra containers for lab QC, 0445_SW340_211109 - extra containers for lab QC, 0445_SW380_211108, 0445_QC102_211110, 0445_QC304_211110	**10-Nov-2021**	**19-Nov-2021**	09-May-2022	✓	**19-Nov-2021**	09-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW029_211111 - Extra containers for QC, 0445_MW051_211110, 0445_MW056_211111, 0445_MW307_211110, 0445_MW342_211111, 0445_MW350_D_211111 - Extra containers for QC, 0445_MW350_S_211111, 0445_MW404_211111, 0445_QC103_211111, 0445_QC105_211111, 0445_QC305_211111, 0445_SW462_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW012_211111, 0445_MW042_211111, 0445_MW353_211111, 0445_MW403_211111, 0445_QC104_211111, 0445_QC101_211110, 0445_QC100_211110, 0445_QC308_211112	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0445_QC300_211108, 0445_QC500_211108	**08-Nov-2021**	**19-Nov-2021**	07-May-2022	✓	**19-Nov-2021**	07-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC301_211109, 0445_QC501_211109, 0445_SW390_211109	**09-Nov-2021**	**19-Nov-2021**	08-May-2022	✓	**19-Nov-2021**	08-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW304_211110, 0445_MW312_21110, 0445_MW319_211110, 0445_MW321_211110, 0445_MW323_211110, 0445_MW326_211110, 0445_MW329_21110, 0445_SW338_211109 - extra containers for lab QC, 0445_SW340_211109 - extra containers for lab QC, 0445_SW380_211108, 0445_QC102_211110, 0445_QC304_211110	**10-Nov-2021**	**19-Nov-2021**	09-May-2022	✓	**19-Nov-2021**	09-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW029_211111 - Extra containers for QC, 0445_MW051_211110, 0445_MW056_211111, 0445_MW307_211110, 0445_MW342_211111, 0445_MW350_D_211111 - Extra containers for QC, 0445_MW350_S_211111, 0445_MW404_211111, 0445_QC103_211111, 0445_QC105_211111, 0445_QC305_211111, 0445_SW462_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW012_211111, 0445_MW042_211111, 0445_MW353_211111, 0445_MW403_211111, 0445_QC104_211111, 0445_QC101_211110, 0445_QC100_211110, 0445_QC308_211112	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	38	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2122518**	Page	: 1 of 9
Client	: [redacted]	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 15-Nov-2021 12:15
Order number	: -	Date Analysis Commenced	: 18-Nov-2021
C-O-C number	: 29915	Issue Date	: 22-Nov-2021 16:38
Sampler	: [redacted]		
Site	: Public Land		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW616_211111	0445_MW659_211112	0445_MW65x_211112	0445_MW690_211111	0445_MW691_211111
			Sampling date / time	11-Nov-2021 11:45	12-Nov-2021 07:57	12-Nov-2021 09:33	11-Nov-2021 11:44	11-Nov-2021 11:43
Compound	CAS Number	LOR	Unit	EM2122518-001	EM2122518-002	EM2122518-006	EM2122518-004	EM2122518-005
				Result	Result	Result	Result	Result
EP261A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PF3 S)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
PerfluoroheBane sulfonic acid (PFHBS)	355-46-4	0.01	µg/L	<0.01	<0.01	**0.04**	**0.08**	**0.16**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	**0.06**	**0.09**	**0.07**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP2613 : Perfluoroalkyl CarboBylic Acids								
Perfluorobutanoic acid (PF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
PerfluoroheBanoic acid (PFHBA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	**0.01**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP261C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW616_211111	0445_MW659_211112	0445_MW65x_211112	0445_MW690_211111	0445_MW691_211111
				Sampling date / time	11-Nov-2021 11:45	12-Nov-2021 07:57	12-Nov-2021 09:33	11-Nov-2021 11:44	11-Nov-2021 11:43
Compound	CAS Number	LOR	Unit		EM2122518-001	EM2122518-002	EM2122518-006	EM2122518-004	EM2122518-005
					Result	Result	Result	Result	Result
EP261C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP261D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
9:2 Fluorotelomer sulfonic acid (9:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
7:2 Fluorotelomer sulfonic acid (7:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP261P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.0x**	**0.15**	**0.22**
Sum of PFHBS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.0x**	**0.15**	**0.21**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.0x**	**0.15**	**0.22**
EP261S: PFAS Surrogate									
16C4-PFOS	----	0.02	%		**100**	**109**	**110**	**84.2**	**87.9**
16C7-PFOA	----	0.02	%		**88.8**	**102**	**101**	**102**	**102**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_SW412_211112	----	----	----	----
			Sampling date / time	12-Nov-2021 10:05	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2122518-010	--------	--------	--------	--------
				Result	----	----	----	----
EP261A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PF3 S)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----
PerfluoroheBane sulfonic acid (PFHBS)	355-46-4	0.01	µg/L	**0.01**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.04**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----
EP2613 : Perfluoroalkyl CarboBylic Acids								
Perfluorobutanoic acid (PF3 A)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
PerfluoroheBanoic acid (PFHBA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----
EP261C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_SW412_211112	----	----	----	----
			Sampling date / time	12-Nov-2021 10:05	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2122518-010	--------	--------	--------	--------
				Result	----	----	----	----
EP261C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----
EP261D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----
9:2 Fluorotelomer sulfonic acid (9:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----
7:2 Fluorotelomer sulfonic acid (7:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----
EP261P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.05**	----	----	----	----
Sum of PFHBS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.05**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.05**	----	----	----	----
EP261S: PFAS Surrogate								
16C4-PFOS	----	0.02	%	**77.7**	----	----	----	----
16C7-PFOA	----	0.02	%	**106**	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW406_211112	0445_SW404_211112 EBtra containers for QC	0445_SW405_211112	0445_SW408_211112	0445_SW419_211111
			Sampling date / time	12-Nov-2021 08:20	12-Nov-2021 08:21	12-Nov-2021 08:19	12-Nov-2021 11:17	12-Nov-2021 10:39
Compound	CAS Number	LOR	Unit	EM2122518-009	EM2122518-00x	EM2122518-007	EM2122518-008	EM2122518-011
				Result	Result	Result	Result	Result
EP261A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PF3 S)	375-73-5	0.02	µg/L	**0.08**	<0.02	**0.07**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.0x**	<0.02	**0.0x**	<0.02	<0.02
PerfluoroheBane sulfonic acid (PFHBS)	355-46-4	0.01	µg/L	**0.66**	<0.01	**0.65**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.29**	<0.01	**0.19**	**0.02**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP2613 : Perfluoroalkyl CarboBylic Acids								
Perfluorobutanoic acid (PF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
PerfluoroheBanoic acid (PFHBA)	307-24-4	0.02	µg/L	**0.0x**	<0.02	**0.09**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	<0.01	**0.02**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP261C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW406_211112	0445_SW404_211112 EBtra containers for QC	0445_SW405_211112	0445_SW408_211112	0445_SW419_211111
				Sampling date / time	12-Nov-2021 08:20	12-Nov-2021 08:21	12-Nov-2021 08:19	12-Nov-2021 11:17	12-Nov-2021 10:39
Compound	CAS Number	LOR	Unit		EM2122518-009	EM2122518-00x	EM2122518-007	EM2122518-008	EM2122518-011
					Result	Result	Result	Result	Result
EP261C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP261D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
9:2 Fluorotelomer sulfonic acid (9:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
7:2 Fluorotelomer sulfonic acid (7:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP261P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.74**	<0.01	**0.x4**	**0.02**	<0.01
Sum of PFHBS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.58**	<0.01	**0.51**	**0.02**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.xx**	<0.01	**0.9x**	**0.02**	<0.01
EP261S: PFAS Surrogate									
16C4-PFOS	----	0.02	%		**107**	**119**	**107**	**78.0**	**87.4**
16C7-PFOA	----	0.02	%		**102**	**104**	**105**	**109**	**106**

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP261S: PFAS Surrogate			
16C4-PFOS	----	65	140
16C7-PFOA	----	71	133

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP261S: PFAS Surrogate			
16C4-PFOS	----	65	140
16C7-PFOA	----	71	133

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2122519**		
Client	: [redacted]	Laboratory	: [redacted]
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: VIC_0445_PFASOMP	Page	: 1 of 2
Order number	: -	Quote number	: EM2021LANECON0009 (SY/139/19_Bandiana)
C-O-C number	: 29915	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Public Land		
Sampler	: [redacted]		

Dates

Date Samples Received	: 15-Nov-2021 12:15	Issue Date	: 16-Nov-2021
Client Requested Due Date	: 22-Nov-2021	Scheduled Reporting Date	: **22-Nov-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 3.4°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 11 / 11

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM2122519-007 : 12-Nov-2021 08:21 : 0445_SW404_211112 - Extra containers for QC

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2122519-001	11-Nov-2021 11:45	0445_MW313_211111	✓
EM2122519-002	12-Nov-2021 07:57	0445_MW356_211112	✓
EM2122519-003	12-Nov-2021 09:33	0445_MW357_211112	✓
EM2122519-004	11-Nov-2021 11:44	0445_MW360_211111	✓
EM2122519-005	11-Nov-2021 11:43	0445_MW361_211111	✓
EM2122519-006	12-Nov-2021 08:20	0445_SW403_211112	✓
EM2122519-007	12-Nov-2021 08:21	0445_SW404_211112 E...	✓
EM2122519-008	12-Nov-2021 08:19	0445_SW405_211112	✓
EM2122519-009	12-Nov-2021 11:17	0445_SW409_211112	✓
EM2122519-010	12-Nov-2021 10:05	0445_SW412_211112	✓
EM2122519-011	12-Nov-2021 10:39	0445_SW416_211111	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

ALL INVOICES

- A4 - AU Tax Invoice (INV) Email

DERP LAB REPORTS

- EDI Format - ESDAT (ESDAT) Email

[redacted]

CHAIN OF CUSTODY

ALS COC#: 29915 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Land

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_MW313_211111		11/11/2021 11:45 AM	Water	ALS: 2 Non ALS: 0	No	X		
002	0445_MW356_211112		12/11/2021 07:57 AM	Water	ALS: 2 Non ALS: 0	No	X		
003	0445_MW357_211112		12/11/2021 09:33 AM	Water	ALS: 2 Non ALS: 0	No	X		
004	0445_MW360_211111		11/11/2021 11:44 AM	Water	ALS: 2 Non ALS: 0	No	X		
005	0445_MW361_211111		11/11/2021 11:43 AM	Water	ALS: 2 Non ALS: 0	No	X		
006	0445_SW403_211112		12/11/2021 08:20 AM	Water	ALS: 2 Non ALS: 0	No	X		
007	0445_SW404_211112	Extra containers for QC	12/11/2021 08:21 AM	Water	ALS: 6 Non ALS: 0	No	X		
008	0445_SW405_211112		12/11/2021 08:19 AM	Water	ALS: 2 Non ALS: 0	No	X		
009	0445_SW409_211112		12/11/2021 11:17 AM	Water	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2122519

Telephone : +61-3-8549 9600

Received: 15/11 1215 Carrier: ~~Taxi~~

C/note:

Temp: 3.4 °C Seal: Y / N

Ice / Icebricks / NA

CHAIN OF CUSTODY

(ALS) COC#: 29915 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Land

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard Info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_SW412_211112		12/11/2021 10:05 AM	Water	ALS: 2 Non ALS: 0	No	X		
011	0445_SW416_211111		12/11/2021 10:39 AM	Water	ALS: 2 Non ALS: 0	No	X		

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2122519**	Page	: 1 of L
i lreEy	: [redacted]	bat orayorC	: v EmroED eEyal MmmsroE c elt ourEe
i oEyaAy	: [redacted]	i oEyaAy	: [redacted]
B55ress	: [redacted]	B55ress	: [redacted]
Tele7- oEe	: ----	Tele7- oEe	: [redacted]
ProjeAy	: , Ii _0ppS_PFBNUc P	Maye NaD 7les l eAeme5	: 1S-Oom-2021
Ur5er EuDt er	: -	Maye BEalCsms i oDDeEAe5	: 18-Oom-2021
i -U-i EuDt er	: 2991S	Issue Maye	: 22-Oom-2021
NaD 7ler	: [redacted]		
Nme	: Put InAbaE5		
Quoye EuDt er	: NY/149/19_WaE5maEa		
Oo. of saD 7les reAeme5	: 11		
Oo. of saD 7les aEalCse5	: 11		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

T-ns re7ory su7erse5es aEC 7remmous re7ory(s) wmy- y-ns refereEAe. l esulys a77lC yo y-e saD 7le(s) as sut Dmye53 uEless y-e saD 7lmEg was AoE5uAye5 t C BbN. T-ns 5oAuDeEy s-all Eoyt e re7ro5uAe53exAe7ymE full.

T-ns QualmyCi oEyrol l e7ory AoEyamEs y-e followmEg mEforD aymoE:

- bat orayorCMu7lmAaye (MVP) l e7ory; l elaymne PerAeEyage MmfereEAe (l PM) aE5 BAAe7yaEAe bmDms
- c ey-o5 WaEd (c W) aE5 bat orayorCi oEyrol N7mde (bi N) l e7ory; l eAomerCaE5 BAAe7yaEAe bmDms
- c aymx N7mde (c N) l e7ory; l eAomerCaE5 BAAe7yaEAe bmDms

Signatories

T-ns 5oAuDeEy- as t eeE eleAyroEmAallCsmgEe5 t Cy-e auy-ormze5 smgEayormes t elow. v leAyroEmA smgEmEg ms Aarme5 ouymE AoD 7lmaEAe wmy- 7roAe5ures s7eAme5 mE 21 i Fl Pary 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	NeEmor UrgaEmAi - eDmsy	c elt ourEe UrgaEmAs3N7mEgmale3, Ii

General Comments

T- e aEalOyrAal 7roAe5ures use5 t C BbN - ame t eeE 5emelo7e5 froD esyat lns- e5 rEyerEayroEallC reAogEnse5 7roAe5ures suA- as y- ose 7ut lns- e5 t C y- e VNv PB3 BPHB3 BN aE5 Ov Pc . IE - ouse 5emelo7e5 7roAe5ures are fullCmalr5aye5 aE5 are ofyeE ayy- e AlreEyrequesy.

R - ere Dorsyure 5eyerDrEayroE - as t eeE 7erforDe53resulys are re7orye5 oE a 5rCweng- yt asns.

R - ere a re7orye5 less y- aE (<) resuly ns - ng- er y- aE y- e bUI 3 y- ns DaC t e 5ue yo 7rnDarC saD7le exyraAy/5rgesyaye 5rluyroE aE5/or rEsuffrAreEy saD7le for aEalOsns. R - ere y- e bUI of a re7orye5 resuly 5rffers froD syaE5ar5 bUI 3y- ns DaCt e 5ue yo - ng- Dorsyure AoEyeEy3rEsuffrAreEysaD7le (re5uAe5 weng- yeD7loOe5) or Dayrx rEyerfereEAe.

KeC: BEoECDous = I efers yo saD7les w- rA- are Eoys7eArfrAallC7aryof y- ns word or5er t uyforDe5 7aryof y- e Qi 7roAess loy
i BN OuDt er = i BN regnsyrCEuDt er froD 5ayat ase DarEyarEe5 t Ci - eDrAal Bt syraAys NermrAes. T- e i - eDrAal Bt syraAys NermrAe ns a 5rnsrroE of y- e BDermAaE i - eDrAal NoAreyC.
bUI = brnDryof re7oryrEg
I PM = I elayrne PerAeEyage MrffereEAe
= IE5rAayes farle5 Qi

Laboratory Duplicate (DUP) Report

T- e qualnyC AoEyrol yerD bat orayorC Mu7lrAaye refers yo a raE5oDIC seleAye5 rEyralat orayorC s7lry bat orayorC 5u7lrAayes 7rorn5e rEforDayroE regar5rEg Dey- o5 7reArsroE aE5 saD7le - eyerogeEenyC. T- e 7erDnye5 raEges for y- e I elayrne PerAeEy MernayroE (I PM) of bat orayorC Mu7lrAayes are s7eArfre5 rE BbN c ey- o5 QR I -v O/48 aE5 are 5e7eE5eEy oE y- e DagEnyu5e of resulys rE AoD7arnsoE yo y- e lernel of re7oryrEg: I esuly < 10 yrDes bUI : Oo brnDry, I esulyt eyweeE 10 aE5 20 yrDes bUI : 0% - S0%; I esuly> 20 yrDes bUI : 0% - 20%.

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: Perfluoro- exaEe sulfoErAaAr5 (PFHxN)	4SS-pL-p	0.01	µg/b	<0.01	<0.01	0.0	Oo brnDry
		v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1hL4-24-1	0.01	µg/b	<0.01	<0.01	0.0	Oo brnDry
		v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4hS-h4-S	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2h0L-91-p	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro- e7yaEe sulfoErAaAr5 (PFH7N)	4hS-92-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-hh-4	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: PerfluorooAyaEorAaAr5 (PFUB)	44S-Lh-1	0.01	µg/b	<0.01	<0.01	0.0	Oo brnDry
		v P241X: Perfluoro7eEyaEorAaAr5 (PFPeB)	2h0L-90-4	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro- exaEorAaAr5 (PFHxB)	40h-2p-p	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro- e7yaEorAaAr5 (PFH7B)	4hS-8S-9	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: PerfluoroEoEaEorAaAr5 (PFOB)	4hS-9S-1	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5eAaEorAaAr5 (PFMB)	44S-hL-2	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: PerfluorouE5eAaEorAaAr5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5o5eAaEorAaAr5 (PFMoMB)	40h-SS-1	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoroyr5eAaEorAaAr5 (PFTrMB)	h2L29-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoroyeyra5eAaEorAaAr5 (PFTeMB)	4hL-0L-h	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brnDry
		v P241X: Perfluorot uyaEorAaAr5 (PFWB)	4hS-22-p	0.1	µg/b	<0.1	<0.1	0.0	Oo brnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	hSp-91-L	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4025380) - continued									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyanEers for Qi	v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oaAeynAaAr5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	<0.02	0.0	Oo brDry
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oaAeynAaAr5 (v yFUNBB)	2991-S0-L	0.02	µg/b	<0.02	<0.02	0.0	Oo brDry
		v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S0L-42-8	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (c eFUNv)	2ppp8-09-h	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (v yFUNv)	1L91-99-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyanEers for Qi	v P241X: p:2 FluoroyeloDer sulfoEnAaAr5 (p:2 FTN)	hSh12p-h2-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: L:2 FluoroyeloDer sulfoEnAaAr5 (L:2 FTN)	2hL19-9h-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 8:2 FluoroyeloDer sulfoEnAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 10:2 FluoroyeloDer sulfoEnAaAr5 (10:2 FTN)	12022L-L0-0	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
EP231P: PFAS Sums (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyanEers for Qi	v P241X: NuD of PFBN	----	0.01	µg/b	<0.01	<0.01	0.0	Oo brDry
		v P241X: NuD of PFHxN aE5 PFUN	4SS-pL-p/1hL4-24-1	0.01	µg/b	<0.01	<0.01	0.0	Oo brDry
		v P241X: NuD of PFBN (R B Mv I brsv)	----	0.01	µg/b	<0.01	<0.01	0.0	Oo brDry

Method Blank (MB) and Laboratory Control Sample (LCS) Report

T- e qualnyC AoEyrol yerD c ey- o5 / bat orayorC WaEd refers yo aE aEalOye free Dayrnx yo w- rA- all reageEys are a55e5 rE y- e saDe moluDes or 7ro7oryroEs as use5 rE syaE5ar5 saD7le 7re7arayroE. T- e 7ur7ose of y- rs Qi 7araDeyer rs yo DoEryor 7oyeEyral lat orayorC AoEyaDrEayroE. T- e qualnyC AoEyrol yerD bat orayorC i oEyrol NaD7le (bi N) refers yo a Aeryfre5 refereEAe Dayernal3 or a dEowE rEyerfereEAe free Dayrnx s7rde5 wry- yargey aEalOyes. T- e 7ur7ose of y- rs Qi 7araDeyer rs yo DoEryor Dey- o5 7reArsroE aE5 aAAuraACrE5e7eE5eEyof saD7le Dayrnx. MCEaDrAl eAomerCbrDrys are t ase5 oE syayrsyrAal emaluayroE of 7roAesse5 bi N.

Nut -c ayrnx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4025380)								
v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4hS-h4-S	0.02	µg/b	<0.02	0.222 µg/b	89.1	h2.0	140
v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2h0L-91-p	0.02	µg/b	<0.02	0.24S µg/b	101	h1.0	12h
v P241X: Perfluoro- exaEe sulfoErAaAr5 (PFHxN)	4SS-pL-p	0.01	µg/b	<0.01	0.228 µg/b	9S.4	L8.0	141
v P241X: Perfluoro- e7yaEe sulfoErAaAr5 (PFH7N)	4hS-92-8	0.02	µg/b	<0.02	0.2S µg/b	81.1	L9.0	14p
v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1hL4-24-1	0.01	µg/b	<0.01	0.242 µg/b	89.1	LS.0	1p0
v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-hh-4	0.02	µg/b	<0.02	0.2p1 µg/b	84.S	S4.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4025380)								
v P241X: Perfluorot uyaEorAaAr5 (PFWB)	4hS-22-p	0.1	µg/b	<0.1	1.2S µg/b	9S.1	h4.0	129
v P241X: Perfluoro7eEyaEorAaAr5 (PFPeB)	2h0L-90-4	0.02	µg/b	<0.02	0.2S µg/b	99.h	h2.0	129
v P241X: Perfluoro- exaEorAaAr5 (PFHxB)	40h-2p-p	0.02	µg/b	<0.02	0.2S µg/b	90.h	h2.0	129
v P241X: Perfluoro- e7yaEorAaAr5 (PFH7B)	4hS-8S-9	0.02	µg/b	<0.02	0.2S µg/b	9h.L	h2.0	140
v P241X: PerfluorooAyaEorAaAr5 (PFUB)	44S-Lh-1	0.01	µg/b	<0.01	0.2S µg/b	88.L	h1.0	144
v P241X: PerfluoroEoEaEorAaAr5 (PFOB)	4hS-9S-1	0.02	µg/b	<0.02	0.2S µg/b	90.2	L9.0	140
v P241X: Perfluoro5eAaEorAaAr5 (PFMB)	44S-hL-2	0.02	µg/b	<0.02	0.2S µg/b	91.1	h1.0	129
v P241X: PerfluorouE5eAaEorAaAr5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	0.2S µg/b	9h.1	L9.0	144
v P241X: Perfluoro5o5eAaEorAaAr5 (PFMoMB)	40h-SS-1	0.02	µg/b	<0.02	0.2S µg/b	89.0	h2.0	14p
v P241X: Perfluoryr5eAaEorAaAr5 (PFTrMB)	h2L29-9p-8	0.02	µg/b	<0.02	0.2S µg/b	89.S	LS.0	1pp
v P241X: Perfluoryeyra5eAaEorAaAr5 (PFTeMB)	4hL-0L-h	0.0S	µg/b	<0.0S	0.94hS µg/b	101	h1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025380)								
v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	hSp-91-L	0.02	µg/b	<0.02	0.2S µg/b	84.L	Lh.0	14h
v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S0L-42-8	0.0S	µg/b	<0.0S	0.L2S µg/b	10L	L8.0	1p1
v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	0.L2S µg/b	8p.4	h0.0	140
v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (c eFUNv)	2ppp8-09-h	0.0S	µg/b	<0.0S	0.L2S µg/b	89.8	h0.0	140
v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (v yFUNv)	1L91-99-2	0.0S	µg/b	<0.0S	0.L2S µg/b	8S.9	h0.0	140
v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oaAeyrAaAr5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	0.2S µg/b	122	LS.0	14L
v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oaAeyrAaAr5 (v yFUNBB)	2991-S0-L	0.02	µg/b	<0.02	0.2S µg/b	10L	L1.0	14S
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4025380)								
v P241X: p:2 FluoroyeloDer sulfoErAaAr5 (p:2 FTN)	hSh12p-h2-p	0.0S	µg/b	<0.0S	0.24p µg/b	8S.h	L4.0	1p4
v P241X: L:2 FluoroyeloDer sulfoErAaAr5 (L:2 FTN)	2hL19-9h-2	0.0S	µg/b	<0.0S	0.248 µg/b	94.1	Lp.0	1p0
v P241X: 8:2 FluoroyeloDer sulfoErAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	0.2p µg/b	108	Lh.0	148

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4025380) - continued								
v P241X: 10:2 FluoroyeloDer sulfoEnAaAn5 (10:2 FTN)	12022L-L0-0	0.0S	µg/b	<0.0S	0.2p2 µg/b	8L.0	h0.0	140
EP231P: PFAS Sums (QCLot: 4025380)								
v P241X: NuD of PFBN	----	0.01	µg/b	<0.01	----	----	----	----
v P241X: NuD of PFHxN aE5 PFUN	4SS-pL-p/1h L4-24-1	0.01	µg/b	<0.01	----	----	----	----
v P241X: NuD of PFBN (R B MvI brsy)	----	0.01	µg/b	<0.01	----	----	----	----

Matrix Spike (MS) Report

T-e qualnyC AoEyrol yerD c ayrx N7rde (c N) refers yo aE rEyralat orayorC s7lry saD7le s7rde5 wry- a re7reseEyayme sey of yargey aEalOyes. T-e 7ur7ose of y-rs Qi 7araDeyer rs yo DoEnyor 7oyeEyal Dayrx effeAys oE aEalOye reAomerres. NyayAI eAomerCbrDns as 7er lat orayorCMaya QualnyCUt jeAymes (MQUs). I5eal reAomerCraEges syaye5 DaCt e warre5 rEy- e emeEyof saD7le Dayrx rEyerfereEAe.

Nut -c ayrx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4025380)							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: Perfluorot uyaEe sulfoEnAaAn5 (PFWN)	4hS-h4-S	0.222 µg/b	8h.L	h2.0	140
		v P241X: Perfluoro7eEyaEe sulfoEnAaAn5 (PFPeN)	2h0L-91-p	0.24S µg/b	9p.1	h1.0	12h
		v P241X: Perfluoro- exaEe sulfoEnAaAn5 (PFHxN)	4SS-pL-p	0.228 µg/b	89.1	L8.0	141
		v P241X: Perfluoro- e7yaEe sulfoEnAaAn5 (PFH7N)	4hS-92-8	0.248 µg/b	82.0	L9.0	14p
		v P241X: PerfluorooAyaEe sulfoEnAaAn5 (PFUN)	1hL4-24-1	0.242 µg/b	8S.0	LS.0	1p0
		v P241X: Perfluoro5eAaEe sulfoEnAaAn5 (PFMN)	44S-hh-4	0.2p1 µg/b	h1.0	S4.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4025380)							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: Perfluorot uyaEonAaAn5 (PFWB)	4hS-22-p	1.2S µg/b	8h.L	h4.0	129
		v P241X: Perfluoro7eEyaEonAaAn5 (PFPeB)	2h0L-90-4	0.2S µg/b	98.9	h2.0	129
		v P241X: Perfluoro- exaEonAaAn5 (PFHxB)	40h-2p-p	0.2S µg/b	84.9	h2.0	129
		v P241X: Perfluoro- e7yaEonAaAn5 (PFH7B)	4hS-8S-9	0.2S µg/b	92.S	h2.0	140
		v P241X: PerfluorooAyaEonAaAn5 (PFUB)	44S-Lh-1	0.2S µg/b	8S.h	h1.0	144
		v P241X: PerfluoroEoEaEonAaAn5 (PFOB)	4hS-9S-1	0.2S µg/b	8L.L	L9.0	140
		v P241X: Perfluoro5eAaEonAaAn5 (PFMB)	44S-hL-2	0.2S µg/b	84.2	h1.0	129
		v P241X: PerfluorouE5eAaEonAaAn5 (PFVEMB)	20S8-9p-8	0.2S µg/b	9S.4	L9.0	144
		v P241X: Perfluoro5o5eAaEonAaAn5 (PFMoMB)	40h-SS-1	0.2S µg/b	hL.S	h2.0	14p
		v P241X: Perfluoroyn5eAaEonAaAn5 (PFTrMB)	h2L29-9p-8	0.2S µg/b	h1.h	LS.0	1pp
		v P241X: Perfluoroyeyra5eAaEonAaAn5 (PFTeMB)	4hL-0L-h	0.L2S µg/b	140	h1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025380)							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: PerfluorooAyaEe sulfoEaDn5e (FUNB)	hSp-91-L	0.2S µg/b	81.0	Lh.0	14h
		v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDn5e (c eFUNB)	41S0L-42-8	0.L2S µg/b	8p.h	L8.0	1p1
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDn5e (v yFUNB)	p1S1-S0-2	0.L2S µg/b	h8.S	h0.0	140

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025380) - continued							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarnEers for Qi	v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (c eFUNv)	2ppp8-09-h	0.L2S µg/b	8p.L	h0.0	140
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (v yFUNv)	1L91-99-2	0.L2S µg/b	h8.1	h0.0	140
		v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oaAeyrA aAr5 (c eFUNBB)	24SS-41-9	0.2S µg/b	111	LS.0	14L
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oaAeyrA aAr5 (v yFUNBB)	2991-S0-L	0.2S µg/b	8L.2	L1.0	14S
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4025380)							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarnEers for Qi	v P241X: p:2 FluoroyeloDer sulfoEnAaAr5 (p:2 FTN)	hSh12p-h2-p	0.24p µg/b	84.L	L4.0	1p4
		v P241X: L:2 FluoroyeloDer sulfoEnAaAr5 (L:2 FTN)	2hL19-9h-2	0.248 µg/b	hh.1	Lp.0	1p0
		v P241X: 8:2 FluoroyeloDer sulfoEnAaAr5 (8:2 FTN)	49108-4p-p	0.2p µg/b	101	Lh.0	148
		v P241X: 10:2 FluoroyeloDer sulfoEnAaAr5 (10:2 FTN)	12022L-L0-0	0.2p2 µg/b	hh.h	h0.0	140

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2122519**	Page	: 1 of 5
Client	: [redacted]	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 15-Nov-2021
Site	: Public Land	Issue Date	: 22-Nov-2021
Sampler	: [redacted]	No. of samples received	: 11
Order number	: -	No. of samples analysed	: 11

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	11	9.09	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445_MW313_211111,	0445_MW360_211111,	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
0445_MW361_211111								
HDPE (no PTFE) (EP231X)								
0445_MW356_211112,	0445_MW357_211112,	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
0445_SW403_211112,	0445_SW404_211112 - Extra containers for QC,							
0445_SW405_211112,	0445_SW409_211112,							
0445_SW412_211112,	0445_SW416_211111							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0445_MW313_211111,	0445_MW360_211111,	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
0445_MW361_211111								
HDPE (no PTFE) (EP231X)								
0445_MW356_211112,	0445_MW357_211112,	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
0445_SW403_211112,	0445_SW404_211112 - Extra containers for QC,							
0445_SW405_211112,	0445_SW409_211112,							
0445_SW412_211112,	0445_SW416_211111							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0445_MW313_211111, 0445_MW360_211111, 0445_MW361_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW356_211112, 0445_MW357_211112, 0445_SW403_211112, 0445_SW404_211112 - Extra containers for QC, 0445_SW405_211112, 0445_SW409_211112, 0445_SW412_211112, 0445_SW416_211111	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0445_MW313_211111, 0445_MW360_211111, 0445_MW361_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW356_211112, 0445_MW357_211112, 0445_SW403_211112, 0445_SW404_211112 - Extra containers for QC, 0445_SW405_211112, 0445_SW409_211112, 0445_SW412_211112, 0445_SW416_211111	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0445_MW313_211111, 0445_MW360_211111, 0445_MW361_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW356_211112, 0445_MW357_211112, 0445_SW403_211112, 0445_SW404_211112 - Extra containers for QC, 0445_SW405_211112, 0445_SW409_211112, 0445_SW412_211112, 0445_SW416_211111	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2122518**	Page	: 1 of 9
Client	: [redacted]	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 15-Nov-2021 12:15
Order number	: -	Date Analysis Commenced	: 18-Nov-2021
C-O-C number	: 29915	Issue Date	: 22-Nov-2021 16:38
Sampler	: [redacted]		
Site	: Public Land		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW616_211111	0445_MW659_211112	0445_MW65x_211112	0445_MW690_211111	0445_MW691_211111
			Sampling date / time	11-Nov-2021 11:45	12-Nov-2021 07:57	12-Nov-2021 09:33	11-Nov-2021 11:44	11-Nov-2021 11:43
Compound	CAS Number	LOR	Unit	EM2122518-001	EM2122518-002	EM2122518-006	EM2122518-004	EM2122518-005
				Result	Result	Result	Result	Result
EP261A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PF3 S)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
PerfluoroheBane sulfonic acid (PFHBS)	355-46-4	0.01	µg/L	<0.01	<0.01	**0.04**	**0.08**	**0.16**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	**0.06**	**0.09**	**0.07**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP2613 : Perfluoroalkyl CarboBylic Acids								
Perfluorobutanoic acid (PF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
PerfluoroheBanoic acid (PFHBA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	**0.01**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP261C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW616_211111	0445_MW659_211112	0445_MW65x_211112	0445_MW690_211111	0445_MW691_211111
				Sampling date / time	11-Nov-2021 11:45	12-Nov-2021 07:57	12-Nov-2021 09:33	11-Nov-2021 11:44	11-Nov-2021 11:43
Compound	CAS Number	LOR	Unit		EM2122518-001	EM2122518-002	EM2122518-006	EM2122518-004	EM2122518-005
					Result	Result	Result	Result	Result
EP261C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP261D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
9:2 Fluorotelomer sulfonic acid (9:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
7:2 Fluorotelomer sulfonic acid (7:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP261P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.0x**	**0.15**	**0.22**
Sum of PFHBS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.0x**	**0.15**	**0.21**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.0x**	**0.15**	**0.22**
EP261S: PFAS Surrogate									
16C4-PFOS	----	0.02	%		**100**	**109**	**110**	**84.2**	**87.9**
16C7-PFOA	----	0.02	%		**88.8**	**102**	**101**	**102**	**102**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_SW412_211112	----	----	----	----
			Sampling date / time	12-Nov-2021 10:05	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2122518-010	--------	--------	--------	--------
				Result	----	----	----	----
EP261A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PF3 S)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----
PerfluoroheBane sulfonic acid (PFHBS)	355-46-4	0.01	µg/L	**0.01**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.04**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----
EP2613 : Perfluoroalkyl CarboBylic Acids								
Perfluorobutanoic acid (PF3 A)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
PerfluoroheBanoic acid (PFHBA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----
EP261C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_SW412_211112	----	----	----	----
			Sampling date / time	12-Nov-2021 10:05	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2122518-010	--------	--------	--------	--------
				Result	----	----	----	----
EP261C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----
EP261D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----
9:2 Fluorotelomer sulfonic acid (9:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----
7:2 Fluorotelomer sulfonic acid (7:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----
EP261P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.05**	----	----	----	----
Sum of PFHBS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.05**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.05**	----	----	----	----
EP261S: PFAS Surrogate								
16C4-PFOS	----	0.02	%	**77.7**	----	----	----	----
16C7-PFOA	----	0.02	%	**106**	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW406_211112	0445_SW404_211112 EBtra containers for QC	0445_SW405_211112	0445_SW408_211112	0445_SW419_211111
			Sampling date / time	12-Nov-2021 08:20	12-Nov-2021 08:21	12-Nov-2021 08:19	12-Nov-2021 11:17	12-Nov-2021 10:39
Compound	CAS Number	LOR	Unit	EM2122518-009	EM2122518-00x	EM2122518-007	EM2122518-008	EM2122518-011
				Result	Result	Result	Result	Result
EP261A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PF3 S)	375-73-5	0.02	µg/L	**0.08**	<0.02	**0.07**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.0x**	<0.02	**0.0x**	<0.02	<0.02
PerfluoroheBane sulfonic acid (PFHBS)	355-46-4	0.01	µg/L	**0.66**	<0.01	**0.65**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.29**	<0.01	**0.19**	**0.02**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP2613 : Perfluoroalkyl CarboBylic Acids								
Perfluorobutanoic acid (PF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
PerfluoroheBanoic acid (PFHBA)	307-24-4	0.02	µg/L	**0.0x**	<0.02	**0.09**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	<0.01	**0.02**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP261C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW406_211112	0445_SW404_211112 EBtra containers for QC	0445_SW405_211112	0445_SW408_211112	0445_SW419_211111
				Sampling date / time	12-Nov-2021 08:20	12-Nov-2021 08:21	12-Nov-2021 08:19	12-Nov-2021 11:17	12-Nov-2021 10:39
Compound	CAS Number	LOR	Unit		EM2122518-009	EM2122518-00x	EM2122518-007	EM2122518-008	EM2122518-011
					Result	Result	Result	Result	Result
EP261C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP261D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
9:2 Fluorotelomer sulfonic acid (9:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
7:2 Fluorotelomer sulfonic acid (7:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP261P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.74**	<0.01	**0.x4**	**0.02**	<0.01
Sum of PFHBS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.58**	<0.01	**0.51**	**0.02**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.xx**	<0.01	**0.9x**	**0.02**	<0.01
EP261S: PFAS Surrogate									
16C4-PFOS	----	0.02	%		**107**	**119**	**107**	**78.0**	**87.4**
16C7-PFOA	----	0.02	%		**102**	**104**	**105**	**109**	**106**

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP261S: PFAS Surrogate			
16C4-PFOS	----	65	140
16C7-PFOA	----	71	133

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP261S: PFAS Surrogate			
16C4-PFOS	----	65	140
16C7-PFOA	----	71	133

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2122519**		
Client	: [redacted]	Laboratory	: [redacted]
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: VIC_0445_PFASOMP	Page	: 1 of 2
Order number	: -	Quote number	: EM2021LANECON0009 (SY/139/19_Bandiana)
C-O-C number	: 29915	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Public Land		
Sampler	: [redacted]		

Dates

Date Samples Received	: 15-Nov-2021 12:15	Issue Date	: 16-Nov-2021
Client Requested Due Date	: 22-Nov-2021	Scheduled Reporting Date	: **22-Nov-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 3.4°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 11 / 11

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM2122519-007 : 12-Nov-2021 08:21 : 0445_SW404_211112 - Extra containers for QC

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2122519-001	11-Nov-2021 11:45	0445_MW313_211111	✓
EM2122519-002	12-Nov-2021 07:57	0445_MW356_211112	✓
EM2122519-003	12-Nov-2021 09:33	0445_MW357_211112	✓
EM2122519-004	11-Nov-2021 11:44	0445_MW360_211111	✓
EM2122519-005	11-Nov-2021 11:43	0445_MW361_211111	✓
EM2122519-006	12-Nov-2021 08:20	0445_SW403_211112	✓
EM2122519-007	12-Nov-2021 08:21	0445_SW404_211112 E...	✓
EM2122519-008	12-Nov-2021 08:19	0445_SW405_211112	✓
EM2122519-009	12-Nov-2021 11:17	0445_SW409_211112	✓
EM2122519-010	12-Nov-2021 10:05	0445_SW412_211112	✓
EM2122519-011	12-Nov-2021 10:39	0445_SW416_211111	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

ALL INVOICES

- A4 - AU Tax Invoice (INV) Email

DERP LAB REPORTS

- EDI Format - ESDAT (ESDAT) Email

[redacted]

CHAIN OF CUSTODY

ALS COC#: 29915 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Land

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_MW313_211111		11/11/2021 11:45 AM	Water	ALS: 2 Non ALS: 0	No	X		
002	0445_MW356_211112		12/11/2021 07:57 AM	Water	ALS: 2 Non ALS: 0	No	X		
003	0445_MW357_211112		12/11/2021 09:33 AM	Water	ALS: 2 Non ALS: 0	No	X		
004	0445_MW360_211111		11/11/2021 11:44 AM	Water	ALS: 2 Non ALS: 0	No	X		
005	0445_MW361_211111		11/11/2021 11:43 AM	Water	ALS: 2 Non ALS: 0	No	X		
006	0445_SW403_211112		12/11/2021 08:20 AM	Water	ALS: 2 Non ALS: 0	No	X		
007	0445_SW404_211112	Extra containers for QC	12/11/2021 08:21 AM	Water	ALS: 6 Non ALS: 0	No	X		
008	0445_SW405_211112		12/11/2021 08:19 AM	Water	ALS: 2 Non ALS: 0	No	X		
009	0445_SW409_211112		12/11/2021 11:17 AM	Water	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2122519

Telephone : +61-3-8549 9600

Received: 15/11 1215 Carrier: ~~Taxi~~

C/note:

Temp: 3.4 °C Seal: Y / N

Ice / Icebricks / NA

CHAIN OF CUSTODY

(ALS) COC#: 29915 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Land

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard Info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_SW412_211112		12/11/2021 10:05 AM	Water	ALS: 2 Non ALS: 0	No	X		
011	0445_SW416_211111		12/11/2021 10:39 AM	Water	ALS: 2 Non ALS: 0	No	X		

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2122519**	Page	: 1 of L
i lreEy	: [redacted]	bat orayorC	: v EmroED eEyal MmmsroE c elt ourEe
i oEyaAy	: [redacted]	i oEyaAy	: [redacted]
B55ress	: [redacted]	B55ress	: [redacted]
Tele7- oEe	: ----	Tele7- oEe	: [redacted]
ProjeAy	: , Ii _0ppS_PFBNUc P	Maye NaD 7les l eAeme5	: 1S-Oom-2021
Ur5er EuDt er	: -	Maye BEalCsms i oDDeEAe5	: 18-Oom-2021
i -U-i EuDt er	: 2991S	Issue Maye	: 22-Oom-2021
NaD 7ler	: [redacted]		
Nme	: Put InAbaE5		
Quoye EuDt er	: NY/149/19_WaE5maEa		
Oo. of saD 7les reAeme5	: 11		
Oo. of saD 7les aEalCse5	: 11		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

T-ns re7ory su7erse5es aEC 7remmous re7ory(s) wmy- y-ns refereEAe. l esulys a77lC yo y-e saD 7le(s) as sut Dmye53 uEless y-e saD 7lmEg was AoE5uAye5 t C BbN. T-ns 5oAuDeEy s-all Eoyt e re7ro5uAe53exAe7ymE full.

T-ns QualmyCi oEyrol l e7ory AoEyamEs y-e followmEg mEforD aymoE:

- bat orayorCMu7lmAaye (MVP) l e7ory; l elaymne PerAeEyage MmfereEAe (l PM) aE5 BAAe7yaEAe bmDms
- c ey-o5 WaEd (c W) aE5 bat orayorCi oEyrol N7mde (bi N) l e7ory; l eAomerCaE5 BAAe7yaEAe bmDms
- c aymx N7mde (c N) l e7ory; l eAomerCaE5 BAAe7yaEAe bmDms

Signatories

T-ns 5oAuDeEy- as t eeE eleAyroEmAallCsmgEe5 t Cy-e auy-ormze5 smgEayormes t elow. v leAyroEmA smgEmEg ms Aarme5 ouymE AoD 7lmaEAe wmy- 7roAe5ures s7eAme5 mE 21 i Fl Pary 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	NeEmor UrgaEmAi - eDmsy	c elt ourEe UrgaEmAs3N7mEgmale3, Ii

General Comments

T- e aEalOyrAal 7roAe5ures use5 t C BbN - ame t eeE 5emelo7e5 froD esyat lns- e5 rEyerEayroEallC reAogEnse5 7roAe5ures suA- as y- ose 7ut lns- e5 t C y- e VNv PB3 BPHB3 BN aE5 Ov Pc . IE - ouse 5emelo7e5 7roAe5ures are fullCmalr5aye5 aE5 are ofyeE ayy- e AlreEyrequesy.

R - ere Dorsyure 5eyerDrEayroE - as t eeE 7erforDe53resulys are re7orye5 oE a 5rCweng- yt asns.

R - ere a re7orye5 less y- aE (<) resuly ns - ng- er y- aE y- e bUI 3 y- ns DaC t e 5ue yo 7rnDarC saD7le exyraAy/5rgesyaye 5rluyroE aE5/or rEsuffrAreEy saD7le for aEalOsns. R - ere y- e bUI of a re7orye5 resuly 5rffers froD syaE5ar5 bUI 3y- ns DaCt e 5ue yo - ng- Dorsyure AoEyeEy3rEsuffrAreEysaD7le (re5uAe5 weng- yeD7loOe5) or Dayrx rEyerfereEAe.

KeC: BEoECDous = I efers yo saD7les w- rA- are Eoys7eArfrAallC7aryof y- ns word or5er t uyforDe5 7aryof y- e Qi 7roAess loy
i BN OuDt er = i BN regnsyrCEuDt er froD 5ayat ase DarEyarEe5 t Ci - eDrAal Bt syraAys NermrAes. T- e i - eDrAal Bt syraAys NermrAe ns a 5rnsrroE of y- e BDermAaE i - eDrAal NoAreyC.
bUI = brnDryof re7oryrEg
I PM = I elayrne PerAeEyage MrffereEAe
= IE5rAayes farle5 Qi

Laboratory Duplicate (DUP) Report

T- e qualnyC AoEyrol yerD bat orayorC Mu7lrAaye refers yo a raE5oDIC seleAye5 rEyralat orayorC s7lry bat orayorC 5u7lrAayes 7rorn5e rEforDayroE regar5rEg Dey- o5 7reArsroE aE5 saD7le - eyerogeEenyC. T- e 7erDnye5 raEges for y- e I elayrne PerAeEy MernayroE (I PM) of bat orayorC Mu7lrAayes are s7eArfre5 rE BbN c ey- o5 QR I -v O/48 aE5 are 5e7eE5eEy oE y- e DagEnyu5e of resulys rE AoD7arnsoE yo y- e lernel of re7oryrEg: I esuly < 10 yrDes bUI : Oo brnDry, I esulyt eyweeE 10 aE5 20 yrDes bUI : 0% - S0%; I esuly> 20 yrDes bUI : 0% - 20%.

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: Perfluoro- exaEe sulfoErAaAr5 (PFHxN)	4SS-pL-p	0.01	µg/b	<0.01	<0.01	0.0	Oo brnDry
		v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1hL4-24-1	0.01	µg/b	<0.01	<0.01	0.0	Oo brnDry
		v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4hS-h4-S	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2h0L-91-p	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro- e7yaEe sulfoErAaAr5 (PFH7N)	4hS-92-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-hh-4	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: PerfluorooAyaEorAaAr5 (PFUB)	44S-Lh-1	0.01	µg/b	<0.01	<0.01	0.0	Oo brnDry
		v P241X: Perfluoro7eEyaEorAaAr5 (PFPeB)	2h0L-90-4	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro- exaEorAaAr5 (PFHxB)	40h-2p-p	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro- e7yaEorAaAr5 (PFH7B)	4hS-8S-9	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: PerfluoroEoEaEorAaAr5 (PFOB)	4hS-9S-1	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5eAaEorAaAr5 (PFMB)	44S-hL-2	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: PerfluorouE5eAaEorAaAr5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5o5eAaEorAaAr5 (PFMoMB)	40h-SS-1	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoroyr5eAaEorAaAr5 (PFTrMB)	h2L29-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoroyeyra5eAaEorAaAr5 (PFTeMB)	4hL-0L-h	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brnDry
		v P241X: Perfluorot uyaEorAaAr5 (PFWB)	4hS-22-p	0.1	µg/b	<0.1	<0.1	0.0	Oo brnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	hSp-91-L	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4025380) - continued									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyanEers for Qi	v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oaAeynAaAr5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	<0.02	0.0	Oo brDry
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oaAeynAaAr5 (v yFUNBB)	2991-S0-L	0.02	µg/b	<0.02	<0.02	0.0	Oo brDry
		v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S0L-42-8	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (c eFUNv)	2ppp8-09-h	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (v yFUNv)	1L91-99-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyanEers for Qi	v P241X: p:2 FluoroyeloDer sulfoEnAaAr5 (p:2 FTN)	hSh12p-h2-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: L:2 FluoroyeloDer sulfoEnAaAr5 (L:2 FTN)	2hL19-9h-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 8:2 FluoroyeloDer sulfoEnAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 10:2 FluoroyeloDer sulfoEnAaAr5 (10:2 FTN)	12022L-L0-0	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
EP231P: PFAS Sums (QC Lot: 4025380)									
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyanEers for Qi	v P241X: NuD of PFBN	----	0.01	µg/b	<0.01	<0.01	0.0	Oo brDry
		v P241X: NuD of PFHxN aE5 PFUN	4SS-pL-p/1hL4-24-1	0.01	µg/b	<0.01	<0.01	0.0	Oo brDry
		v P241X: NuD of PFBN (R B Mv I brsv)	----	0.01	µg/b	<0.01	<0.01	0.0	Oo brDry

Method Blank (MB) and Laboratory Control Sample (LCS) Report

T- e qualnyC AoEyrol yerD c ey- o5 / bat orayorC WaEd refers yo aE aEalOye free Dayrnx yo w- rA- all reageEys are a55e5 rE y- e saDe moluDes or 7ro7oryroEs as use5 rE syaE5ar5 saD7le 7re7arayroE. T- e 7ur7ose of y- rs Qi 7araDeyer rs yo DoEryor 7oyeEyral lat orayorC AoEyaDrEayroE. T- e qualnyC AoEyrol yerD bat orayorC i oEyrol NaD7le (bi N) refers yo a Aeryfre5 refereEAe Dayernal3 or a dEowE rEyerfereEAe free Dayrnx s7rde5 wry- yargey aEalOyes. T- e 7ur7ose of y- rs Qi 7araDeyer rs yo DoEryor Dey- o5 7reArsroE aE5 aAAuraACrE5e7eE5eEyof saD7le Dayrnx. MCEaDrAl eAomerCbrDrys are t ase5 oE syayrsyrAal emaluayroE of 7roAesse5 bi N.

Nut -c ayrnx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4025380)								
v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4hS-h4-S	0.02	µg/b	<0.02	0.222 µg/b	89.1	h2.0	140
v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2h0L-91-p	0.02	µg/b	<0.02	0.24S µg/b	101	h1.0	12h
v P241X: Perfluoro- exaEe sulfoErAaAr5 (PFHxN)	4SS-pL-p	0.01	µg/b	<0.01	0.228 µg/b	9S.4	L8.0	141
v P241X: Perfluoro- e7yaEe sulfoErAaAr5 (PFH7N)	4hS-92-8	0.02	µg/b	<0.02	0.2S µg/b	81.1	L9.0	14p
v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1hL4-24-1	0.01	µg/b	<0.01	0.242 µg/b	89.1	LS.0	1p0
v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-hh-4	0.02	µg/b	<0.02	0.2p1 µg/b	84.S	S4.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4025380)								
v P241X: Perfluorot uyaEorAaAr5 (PFWB)	4hS-22-p	0.1	µg/b	<0.1	1.2S µg/b	9S.1	h4.0	129
v P241X: Perfluoro7eEyaEorAaAr5 (PFPeB)	2h0L-90-4	0.02	µg/b	<0.02	0.2S µg/b	99.h	h2.0	129
v P241X: Perfluoro- exaEorAaAr5 (PFHxB)	40h-2p-p	0.02	µg/b	<0.02	0.2S µg/b	90.h	h2.0	129
v P241X: Perfluoro- e7yaEorAaAr5 (PFH7B)	4hS-8S-9	0.02	µg/b	<0.02	0.2S µg/b	9h.L	h2.0	140
v P241X: PerfluorooAyaEorAaAr5 (PFUB)	44S-Lh-1	0.01	µg/b	<0.01	0.2S µg/b	88.L	h1.0	144
v P241X: PerfluoroEoEaEorAaAr5 (PFOB)	4hS-9S-1	0.02	µg/b	<0.02	0.2S µg/b	90.2	L9.0	140
v P241X: Perfluoro5eAaEorAaAr5 (PFMB)	44S-hL-2	0.02	µg/b	<0.02	0.2S µg/b	91.1	h1.0	129
v P241X: PerfluorouE5eAaEorAaAr5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	0.2S µg/b	9h.1	L9.0	144
v P241X: Perfluoro5o5eAaEorAaAr5 (PFMoMB)	40h-SS-1	0.02	µg/b	<0.02	0.2S µg/b	89.0	h2.0	14p
v P241X: Perfluoryr5eAaEorAaAr5 (PFTrMB)	h2L29-9p-8	0.02	µg/b	<0.02	0.2S µg/b	89.S	LS.0	1pp
v P241X: Perfluoryeyra5eAaEorAaAr5 (PFTeMB)	4hL-0L-h	0.0S	µg/b	<0.0S	0.94hS µg/b	101	h1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025380)								
v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	hSp-91-L	0.02	µg/b	<0.02	0.2S µg/b	84.L	Lh.0	14h
v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S0L-42-8	0.0S	µg/b	<0.0S	0.L2S µg/b	10L	L8.0	1p1
v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	0.L2S µg/b	8p.4	h0.0	140
v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (c eFUNv)	2ppp8-09-h	0.0S	µg/b	<0.0S	0.L2S µg/b	89.8	h0.0	140
v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (v yFUNv)	1L91-99-2	0.0S	µg/b	<0.0S	0.L2S µg/b	8S.9	h0.0	140
v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oaAeyrAaAr5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	0.2S µg/b	122	LS.0	14L
v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oaAeyrAaAr5 (v yFUNBB)	2991-S0-L	0.02	µg/b	<0.02	0.2S µg/b	10L	L1.0	14S
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4025380)								
v P241X: p:2 FluoroyeloDer sulfoErAaAr5 (p:2 FTN)	hSh12p-h2-p	0.0S	µg/b	<0.0S	0.24p µg/b	8S.h	L4.0	1p4
v P241X: L:2 FluoroyeloDer sulfoErAaAr5 (L:2 FTN)	2hL19-9h-2	0.0S	µg/b	<0.0S	0.248 µg/b	94.1	Lp.0	1p0
v P241X: 8:2 FluoroyeloDer sulfoErAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	0.2p µg/b	108	Lh.0	148

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4025380) - continued								
v P241X: 10:2 FluoroyeloDer sulfoEnAaAn5 (10:2 FTN)	12022L-L0-0	0.0S	µg/b	<0.0S	0.2p2 µg/b	8L.0	h0.0	140
EP231P: PFAS Sums (QCLot: 4025380)								
v P241X: NuD of PFBN	----	0.01	µg/b	<0.01	----	----	----	----
v P241X: NuD of PFHxN aE5 PFUN	4SS-pL-p/1h L4-24-1	0.01	µg/b	<0.01	----	----	----	----
v P241X: NuD of PFBN (R B MvI brsy)	----	0.01	µg/b	<0.01	----	----	----	----

Matrix Spike (MS) Report

T-e qualnyC AoEyrol yerD c ayrx N7rde (c N) refers yo aE rEyralat orayorC s7lry saD7le s7rde5 wry- a re7reseEyayme sey of yargey aEalOyes. T-e 7ur7ose of y-rs Qi 7araDeyer rs yo DoEnyor 7oyeEyal Dayrx effeAys oE aEalOye reAomerres. NyayAI eAomerCbrDns as 7er lat orayorCMaya QualnyCUt jeAymes (MQUs). I5eal reAomerCraEges syaye5 DaCt e warre5 rEy- e emeEyof saD7le Dayrx rEyerfereEAe.

Nut -c ayrx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4025380)							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: Perfluorot uyaEe sulfoEnAaAn5 (PFWN)	4hS-h4-S	0.222 µg/b	8h.L	h2.0	140
		v P241X: Perfluoro7eEyaEe sulfoEnAaAn5 (PFPeN)	2h0L-91-p	0.24S µg/b	9p.1	h1.0	12h
		v P241X: Perfluoro- exaEe sulfoEnAaAn5 (PFHxN)	4SS-pL-p	0.228 µg/b	89.1	L8.0	141
		v P241X: Perfluoro- e7yaEe sulfoEnAaAn5 (PFH7N)	4hS-92-8	0.248 µg/b	82.0	L9.0	14p
		v P241X: PerfluorooAyaEe sulfoEnAaAn5 (PFUN)	1hL4-24-1	0.242 µg/b	8S.0	LS.0	1p0
		v P241X: Perfluoro5eAaEe sulfoEnAaAn5 (PFMN)	44S-hh-4	0.2p1 µg/b	h1.0	S4.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4025380)							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: Perfluorot uyaEonAaAn5 (PFWB)	4hS-22-p	1.2S µg/b	8h.L	h4.0	129
		v P241X: Perfluoro7eEyaEonAaAn5 (PFPeB)	2h0L-90-4	0.2S µg/b	98.9	h2.0	129
		v P241X: Perfluoro- exaEonAaAn5 (PFHxB)	40h-2p-p	0.2S µg/b	84.9	h2.0	129
		v P241X: Perfluoro- e7yaEonAaAn5 (PFH7B)	4hS-8S-9	0.2S µg/b	92.S	h2.0	140
		v P241X: PerfluorooAyaEonAaAn5 (PFUB)	44S-Lh-1	0.2S µg/b	8S.h	h1.0	144
		v P241X: PerfluoroEoEaEonAaAn5 (PFOB)	4hS-9S-1	0.2S µg/b	8L.L	L9.0	140
		v P241X: Perfluoro5eAaEonAaAn5 (PFMB)	44S-hL-2	0.2S µg/b	84.2	h1.0	129
		v P241X: PerfluorouE5eAaEonAaAn5 (PFVEMB)	20S8-9p-8	0.2S µg/b	9S.4	L9.0	144
		v P241X: Perfluoro5o5eAaEonAaAn5 (PFMoMB)	40h-SS-1	0.2S µg/b	hL.S	h2.0	14p
		v P241X: Perfluoroyn5eAaEonAaAn5 (PFTrMB)	h2L29-9p-8	0.2S µg/b	h1.h	LS.0	1pp
		v P241X: Perfluoroyeyra5eAaEonAaAn5 (PFTeMB)	4hL-0L-h	0.L2S µg/b	140	h1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025380)							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarEers for Qi	v P241X: PerfluorooAyaEe sulfoEaDn5e (FUNB)	hSp-91-L	0.2S µg/b	81.0	Lh.0	14h
		v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDn5e (c eFUNB)	41S0L-42-8	0.L2S µg/b	8p.h	L8.0	1p1
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDn5e (v yFUNB)	p1S1-S0-2	0.L2S µg/b	h8.S	h0.0	140

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4025380) - continued							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarnEers for Qi	v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (c eFUNv)	2ppp8-09-h	0.L2S µg/b	8p.L	h0.0	140
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oey- aEol (v yFUNv)	1L91-99-2	0.L2S µg/b	h8.1	h0.0	140
		v P241X: O-c ey- Cl 7erfluorooAyaEe sulfoEaDr5oaAeyrA aAr5 (c eFUNBB)	24SS-41-9	0.2S µg/b	111	LS.0	14L
		v P241X: O-v y- Cl 7erfluorooAyaEe sulfoEaDr5oaAeyrA aAr5 (v yFUNBB)	2991-S0-L	0.2S µg/b	8L.2	L1.0	14S
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4025380)							
v c 2122S19-00h	0ppS_NR p0p_211112 v xyra AoEyarnEers for Qi	v P241X: p:2 FluoroyeloDer sulfoEnAaAr5 (p:2 FTN)	hSh12p-h2-p	0.24p µg/b	84.L	L4.0	1p4
		v P241X: L:2 FluoroyeloDer sulfoEnAaAr5 (L:2 FTN)	2hL19-9h-2	0.248 µg/b	hh.1	Lp.0	1p0
		v P241X: 8:2 FluoroyeloDer sulfoEnAaAr5 (8:2 FTN)	49108-4p-p	0.2p µg/b	101	Lh.0	148
		v P241X: 10:2 FluoroyeloDer sulfoEnAaAr5 (10:2 FTN)	12022L-L0-0	0.2p2 µg/b	hh.h	h0.0	140

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2122519**	Page	: 1 of 5
Client	: [redacted]	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 15-Nov-2021
Site	: Public Land	Issue Date	: 22-Nov-2021
Sampler	: [redacted]	No. of samples received	: 11
Order number	: -	No. of samples analysed	: 11

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	11	9.09	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445_MW313_211111,	0445_MW360_211111,	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
0445_MW361_211111								
HDPE (no PTFE) (EP231X)								
0445_MW356_211112,	0445_MW357_211112,	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
0445_SW403_211112,	0445_SW404_211112 - Extra containers for QC,							
0445_SW405_211112,	0445_SW409_211112,							
0445_SW412_211112,	0445_SW416_211111							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0445_MW313_211111,	0445_MW360_211111,	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
0445_MW361_211111								
HDPE (no PTFE) (EP231X)								
0445_MW356_211112,	0445_MW357_211112,	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
0445_SW403_211112,	0445_SW404_211112 - Extra containers for QC,							
0445_SW405_211112,	0445_SW409_211112,							
0445_SW412_211112,	0445_SW416_211111							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0445_MW313_211111, 0445_MW360_211111, 0445_MW361_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW356_211112, 0445_MW357_211112, 0445_SW403_211112, 0445_SW404_211112 - Extra containers for QC, 0445_SW405_211112, 0445_SW409_211112, 0445_SW412_211112, 0445_SW416_211111	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0445_MW313_211111, 0445_MW360_211111, 0445_MW361_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW356_211112, 0445_MW357_211112, 0445_SW403_211112, 0445_SW404_211112 - Extra containers for QC, 0445_SW405_211112, 0445_SW409_211112, 0445_SW412_211112, 0445_SW416_211111	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0445_MW313_211111, 0445_MW360_211111, 0445_MW361_211111	**11-Nov-2021**	**19-Nov-2021**	10-May-2022	✓	**19-Nov-2021**	10-May-2022	✓
HDPE (no PTFE) (EP231X) 0445_MW356_211112, 0445_MW357_211112, 0445_SW403_211112, 0445_SW404_211112 - Extra containers for QC, 0445_SW405_211112, 0445_SW409_211112, 0445_SW412_211112, 0445_SW416_211111	**12-Nov-2021**	**19-Nov-2021**	11-May-2022	✓	**19-Nov-2021**	11-May-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2122969**	Page	: 1 of 9
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Tele47one	: [redacted]	Tele47one	: [redacted]
Project	: UIC_0339_PFA5NMP	Date 5am4les Received	: 16hSovh2021 16:29
Nrder number	: h	Date Analysis Commenced	: 22hSovh2021
CtNhC number	: , 0116	Issue Date	: 23hSovh2021 19:, p
5am4ler	: [redacted]		
5ite	: P02		
Quote number	: 5Y/1, 8/18_Bandiana		
So. of sam4les received	: 1		
So. of sam4les analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

T7is re4ort su4ersedes any 4revious re4ort(s) wit7 t7is reference. Results a44ly to t7e sam4le(s) as submittedV unless t7e sam4ling was conducted by AL5. T7is document s7all not be re4roducedVexce4t in full.

T7is Certificate of Analysis contains t7e following information:

- General Comments
- Analytical Results
- 5urrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

T7is document 7as been electronically signed by t7e aut7orized signatories below. Electronic signing is carried out in com4liance wit7 4rocedures s4ecified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	5enior Nrganic C7emist	Melbourne NrganicsV54ringvaleVUIC

General Comments

T7e analytical 4rocedures used by AL5 7ave been develo4ed from establis7ed internationally recognised 4rocedures suc7 as t7ose 4ublis7ed by t7e O5EPAV APHAV A5 and SEPM. In 7ouse develo4ed 4rocedures are fully validated and are often at t7e client request.

W7ere moisture determination 7as been 4erformedVresults are re4orted on a dry weig7t basis.

W7ere a re4orted less t7an (<) result is 7ig7er t7an t7e LNRVt7is may be due to 4rimary sam4le extract/digestate dilution and/or insufficient sam4le for analysis.

W7ere t7e LNR of a re4orted result differs from standard LNRVt7is may be due to 7ig7 moisture contentVinsufficient sam4le (reduced weig7t em4loyed) or matrix interference.

W7en sam4ling time information is not 4rovided by t7e clientVsam4ling dates are s7own wit7out a time com4onent. In t7ese instancesVt7e time com4onent 7as been assumed by t7e laboratory for 4rocessing 4ur4oses.

W7ere a result is required to meet com4liance limits t7e associated uncertainty must be considered. Refer to t7e AL5 Contact for details.

Key : CA5 Sumber = CA5 registry number from database maintained by C7emical Abstracts 5ervices. T7e C7emical Abstracts 5ervice is a division of t7e American C7emical 5ociety.
LNR = Limit of re4orting
^ = T7is result is com4uted from individual analyte detections at or above t7e level of re4orting
ø = AL5 is not SATA accredited for t7ese tests.
~ = Indicates an estimated value.

- EP2, 1X hPerhand Polyfluoroalkyl 5ubstances (PFA5): 5am4les received in 20ml or 129ml bottles 7ave been tested in accordance wit7 t7e Q5M9., com4liantVSATA accredited met7od. 60mL or 290mL bottles 7ave been tested to t7e legacy Q5M 9.1 alignedVSATA accredited met7od.
- EP2, 1: 5table isoto4e enric7ed intemal standards are added to sam4les 4rior to extraction. Target com4ounds 7ave a direct analogous internal standard wit7 t7e exce4tion of PFPe5VPFH4AVPFD5VPFTrDA and 10:2 FT5. T7ese com4ounds use an internal standard t7at is c7emically related and 7as a retention time close to t7at of t7e target com4ound. T7e DQN for internal standard res4onse is 90ñ190% of t7at establis7ed at initial calibration. PFN5 is quantified using a certifiedVtraceable standard consisting of linear and branc7ed PFN5 isomers. T7ese 4ractices are in line wit7 recommendations in t7e Sational Environmental Management Plan for PFA5 (Australian HEPA) and also conform to Q5M 9., (O5 DoD) requirements.

Analytical Results

5ubMatrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_OTH019_211115	----	----	----	----
			Sampling date / time	19hSovh2021 06:1,	hhh	hhh	hhh	hhh
Compound	CAS Number	LOR	Unit	EM2122969-001	--------	--------	--------	--------
				Result	hhh	hhh	hhh	hhh
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	, p9hp, h9	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2p06h81h8	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	, 99h86h8	0.01	µg/L	**0.13**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	, p9h82h6	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1p6, h2, h1	0.01	µg/L	**0.05**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	, , 9hpph	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	, p9h22h8	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2p06h80h	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	, 0ph23h8	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	, p9h69h8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	, , 9h6ph1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	, p9h89h1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	, , 9hp6h2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2096h83h6	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	, 0ph99h1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	p2628h83h6	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	, p6h06hp	0.09	µg/L	<0.09	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	p93h81h6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	, 1906h 2h6	0.09	µg/L	<0.09	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	3191h90h2	0.09	µg/L	<0.09	----	----	----	----

Analytical Results

5ubMatrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_OTH019_211115	----	----	----	----
				Sampling date / time	19hSovh2021 06:1,	hhh	hhh	hhh	hhh
Compound	CAS Number	LOR	Unit		EM2122969-001	--------	--------	--------	--------
					Result	hhh	hhh	hhh	hhh
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	23336h08hp	0.09	µg/L		<0.09	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1681h88h2	0.09	µg/L		<0.09	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2, 99h 1h8	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2881h90h6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p9p123hp2h8	0.09	µg/L		<0.09	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	2p618h8ph2	0.09	µg/L		<0.09	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	, 8106h 3h8	0.09	µg/L		<0.09	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226h60h0	0.09	µg/L		<0.09	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	hhh	0.01	µg/L		**0.18**	----	----	----	----
Sum of PFHxS and PFOS	, 99h86h8/1p6, h2, h 1	0.01	µg/L		**0.18**	----	----	----	----
Sum of PFAS (WA DER List)	hhh	0.01	µg/L		**0.18**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	hhh	0.02	%		**93.9**	----	----	----	----
13C8-PFOA	hhh	0.02	%		**96.8**	----	----	----	----

Surrogate Control Limits

5ubMatrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	ltth	69	130
13C8-PFOA	ltth	p1	1, ,

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2122969**

Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: VIC_0445_PFASOMP	Page	: 1 of 2
Order number	: -	Quote number	: EM2021LANECON0009 (SY/139/19_Bandiana)
C-O-C number	: 30116	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: P02		
Sampler	: [redacted]		

Dates

Date Samples Received	: 18-Nov-2021 16:25	Issue Date	: 20-Nov-2021
Client Requested Due Date	: 25-Nov-2021	Scheduled Reporting Date	: **25-Nov-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 3.2°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2122969-001	15-Nov-2021 08:13	0445_OTH019_211115	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- A4 - AU Tax Invoice (INV)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - ESDAT (ESDAT)	Email
- EDI Format - XTab (XTAB)	Email
ALL INVOICES	
- A4 - AU Tax Invoice (INV)	Email
DERP LAB REPORTS	
- EDI Format - ESDAT (ESDAT)	Email

[redacted]

CHAIN OF CUSTODY

ALS *COC#:* **30116** *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: P02

ORDER NO:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 18/11/21, 1625

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comments:			

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_OTH019_211115		15/11/2021 08:13 AM	Water	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2122969

Telephone : +61-3-8549 9600

SCANNED

Received: 18/11/21 16:45
Cooler:
Temp: 17.5

Wednesday, November 17, 2021 10:55:23 PM

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2122969**	Page	: 1 of L
i lreEy	: **CARDNO VICTORIA PTY LTD**	bat orayorC	: v EmroED eEyal MmmsroE c elt ourEe
i oEyaAy	: [redacted]	i oEyaAy	: [redacted]
B55ress	: [redacted]	B55ress	: [redacted]
Tele7hoEe	: ----	Tele7hoEe	: [redacted]
ProjeAy	: , Ii _0ppS_PFBNUc P	Maye NaD7les l eAeme5	: 18-Oom2021
Ur5er EuDt er	: -	Maye BEalCsms i oDDeEAe5	: 22-Oom2021
i -U-i EuDt er	: 40116	Issue Maye	: 2p-Oom2021
NaD7ler	: [redacted]		
Nnye	: P02		
Quoye EuDt er	: NY/149/19_WaE5maEa		
Oo. of saD7les reAeme5	: 1		
Oo. of saD7les aEalCse5	: 1		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

Thms re7ory su7erse5es aEC 7remmous re7ory(s) wnyh yhms refereEAe. l esulys a77lC yo yhe saD7le(s) as sut Dnye53 uEless yhe saD7lnEg was AoE5uAye5 t C BbN. Thms 5oAuDeEy shall Eoyt e re7ro5uAe53exAe7ynE full.

Thms QualnyCi oEyrol l e7ory AoEyanEs yhe followmEg nEforDaymoE:

- bat orayorCMu7lnAaye (MVP) l e7ory; l elaymne PerAeEyage MnfereEAe (l PM) aE5 BAAe7yaEAe bnDms
- c eyho5 WaEd (c W) aE5 bat orayorCi oEyrol N7mde (bi N) l e7ory; l eAomerCaE5 BAAe7yaEAe bnDms
- c aymx N7mde (c N) l e7ory; l eAomerCaE5 BAAe7yaEAe bnDms

Signatories

Thms 5oAuDeEy has t eeE eleAyroEnAallCsmgEe5 t Cyhe auyhomze5 smgEayormes t elow. v leAyroEnA smgEnEg ms Aarme5 ouynE AoD7lmaEAe wnyh 7roAe5ures s7eAme5 nE 21 i Fl Pary 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	NeEror UrgaEnAi heDnsy	c elt ourEe UrgaEnAs3N7mEgmale3, Ii

General Comments

The aEalOyrAal 7roAe5ures use5 t C BbN hame t eeE 5emelo7e5 froD esyat lnshe5 nEyerEayroEallC reAogEnse5 7roAe5ures suAh as yhose 7ut lnshe5 t C yhe VNv PB3 BPHB3 BN aE5 Ov Pc . IE house 5emelo7e5 7roAe5ures are fullCmaln5aye5 aE5 are ofyeE ayyhe AlneEyrequesy.

R here Dorsyure 5eyerDnEayroE has t eeE 7erforDe53resulys are re7orye5 oE a 5rCwerghyt asns.

R here a re7orye5 less yhaE (<) resuly ns hrgher yhaE yhe bUI 3 yhns DaC t e 5ue yo 7rnDarC saD7le exyraAy/5rgesyaye 5rluyroE aE5/or nEsuffrAneEy saD7le for aEalOsns. R here yhe bUI of a re7orye5 resuly 5rffers froD syaE5ar5 bUI 3yhns DaCt e 5ue yo hrgh Dorsyure AoEyeEy3rEsuffrAneEysaD7le (re5uAe5 werghyeD7loOe5) or Daynx nEyerfereEAe.

KeC: BEoECDous = I efers yo saD7les whrAh are Eoys7eArfrAallC7aryof yhns word or5er t uyforDe5 7aryof yhe Qi 7roAess loy
i BN OuDt er = i BN regrsyrCEuDt er froD 5ayat ase DarEyarEe5 t Ci heDrAal Bt syraAys NermAes. The i heDrAal Bt syraAys NermAe rs a 5rmsrroE of yhe BDermAaE i heDrAal NoAreyC.
bUI = brnDryof re7oryrEg
I PM = I elayrne PerAeEyage MrffereEAe
= IE5rAayes farle5 Qi

Laboratory Duplicate (DUP) Report

The qualnyC AoEyrol yerD bat orayorC Mu7lrAaye refers yo a raE5oDIC seleAye5 nEyralat orayorC s7lry. bat orayorC 5u7lrAayes 7rom5e nEforDayroE regar5rEg Deyho5 7reArsroE aE5 saD7le heyerogeEenyC. The 7erDnye5 raEges for yhe I elayrne PerAeEy MemrayoE (I PM) of bat orayorC Mu7lrAayes are s7eArfre5 rE BbN c eyho5 QR I -v O/48 aE5 are 5e7eE5eEy oE yhe DagEnu5e of resulys rE AoD7arnsoE yo yhe lemel of re7oryEg: I esuly < 10 yrDes bUI : Oo brnDry, I esulyt eyweeE 10 aE5 20 yrDes bUI : 0% - S0%; I esuly> 20 yrDes bUI : 0% - 20%.

Nut -c aynx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: PerfluorohexaEe sulfoErAaAr5 (PFHxN)	4SS-p6-p	0.01	µg/b	1.0L	1.00	6.S	0% - 20%
		v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1L64-24-1	0.01	µg/b	0.pp	0.p8	8.6	0% - 20%
		v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4LS-L4-S	0.02	µg/b	0.16	0.1S	0.0	Oo brnDry
		v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2L06-91-p	0.02	µg/b	0.11	0.10	0.0	Oo brnDry
		v P241X: Perfluorohe7yaEe sulfoErAaAr5 (PFH7N)	4LS-92-8	0.02	µg/b	0.04	0.0p	0.0	Oo brnDry
		v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-LL-4	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
v c 2122968-006	BEoECDous	v P241X: PerfluorohexaEe sulfoErAaAr5 (PFHxN)	4SS-p6-p	0.01	µg/b	4.4L	4.S6	S.6	0% - 20%
		v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1L64-24-1	0.01	µg/b	4.pS	p.10	1L.p	0% - 20%
		v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4LS-L4-S	0.02	µg/b	0.60	0.66	9.6	0% - 20%
		v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2L06-91-p	0.02	µg/b	0.SL	0.S9	2.S	0% - 20%
		v P241X: Perfluorohe7yaEe sulfoErAaAr5 (PFH7N)	4LS-92-8	0.02	µg/b	0.2L	0.44	19.0	0% - S0%
		v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-LL-4	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: PerfluorooAyaEorAaAr5 (PFUB)	44S-6L-1	0.01	µg/b	0.0p	0.0p	0.0	Oo brnDry
		v P241X: Perfluoro7eEyaEorAaAr5 (PFPeB)	2L06-90-4	0.02	µg/b	0.0p	0.0p	0.0	Oo brnDry
		v P241X: PerfluorohexaEorAaAr5 (PFHxB)	40L-2p-p	0.02	µg/b	0.14	0.12	0.0	Oo brnDry
		v P241X: Perfluorohe7yaEorAaAr5 (PFH7B)	4LS-8S-9	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: PerfluoroEoEaEorAaAr5 (PFOB)	4LS-9S-1	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5eAaEorAaAr5 (PFMB)	44S-L6-2	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: PerfluorouE5eAaEorAaAr5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5o5eAaEorAaAr5 (PFMoMB)	40L-SS-1	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoroyr5eAaEorAaAr5 (PFTrMB)	L2629-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoroyeyra5eAaEorAaAr5 (PFTeMB)	4L6-06-L	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brnDry
		v P241X: Perfluorot uyaEorAaAr5 (PFWB)	4LS-22-p	0.1	µg/b	<0.1	<0.1	0.0	Oo brnDry

Nut -c ayrnx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4028919) - continued									
v c 2122968-006	BEoECDous	v P241X: PerfluorooAyaEomAaAn5 (PFUB)	44S-6L-1	0.01	µg/b	0.40	0.42	4.L	0% - 20%
		v P241X: Perfluoro7eEyaEomAaAn5 (PFPeB)	2L06-90-4	0.02	µg/b	0.21	0.24	8.9	0% - S0%
		v P241X: PerfluorohexaEomAaAn5 (PFHxB)	40L-2p-p	0.02	µg/b	0.69	0.L6	10.p	0% - 20%
		v P241X: Perfluorohe7yaEomAaAn5 (PFH7B)	4LS-8S-9	0.02	µg/b	0.18	0.20	S.S	Oo bnDry
		v P241X: PerfluoroEoEaEomAaAn5 (PFOB)	4LS-9S-1	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: Perfluoro5eAaEomAaAn5 (PFMB)	44S-L6-2	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: PerfluorouE5eAaEomAaAn5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: Perfluoro5o5eAaEomAaAn5 (PFMoMB)	40L-SS-1	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: Perfluoroyn5eAaEomAaAn5 (PFTrMB)	L2629-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: Perfluoroyeya5eAaEomAaAn5 (PFTeMB)	4L6-06-L	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: Perfluorot uyaEomAaAn5 (PFWB)	4LS-22-p	0.1	µg/b	0.2	0.2	0.0	Oo bnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: PerfluorooAyaEe sulfoEaDn5e (FUNB)	LSp-91-6	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5oaAeynAaAn5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5oaAeynAaAn5 (v yFUNBB)	2991-S0-6	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5e (c eFUNB)	41S06-42-8	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5oeyhaEol (c eFUNv)	2ppp8-09-L	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5oeyhaEol (v yFUNv)	1691-99-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
v c 2122968-006	BEoECDous	v P241X: PerfluorooAyaEe sulfoEaDn5e (FUNB)	LSp-91-6	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5oaAeynAaAn5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5oaAeynAaAn5 (v yFUNBB)	2991-S0-6	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5e (c eFUNB)	41S06-42-8	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5oeyhaEol (c eFUNv)	2ppp8-09-L	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5oeyhaEol (v yFUNv)	1691-99-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: p:2 FluoroyeloDer sulfoEmAaAn5 (p:2 FTN)	LSL12p-L2-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4028919) - continued									
v c 2122968-001	BEoECDous	v P241X: 6:2 FluoroyeloDer sulfoEmAaAr5 (6:2 FTN)	2L619-9L-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 8:2 FluoroyeloDer sulfoEmAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 10:2 FluoroyeloDer sulfoEmAaAr5 (10:2 FTN)	120226-60-0	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
v c 2122968-006	BEoECDous	v P241X: p:2 FluoroyeloDer sulfoEmAaAr5 (p:2 FTN)	LSL12p-L2-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 6:2 FluoroyeloDer sulfoEmAaAr5 (6:2 FTN)	2L619-9L-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 8:2 FluoroyeloDer sulfoEmAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
		v P241X: 10:2 FluoroyeloDer sulfoEmAaAr5 (10:2 FTN)	120226-60-0	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brDry
EP231P: PFAS Sums (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: NuD of PFBN	----	0.01	µg/b	2.02	1.9L	2.S	0% - 20%
		v P241X: NuD of PFHxNaE5 PFUN	4SS-p6-p/1L64-24-1	0.01	µg/b	1.S1	1.p8	2.0	0% - 20%
		v P241X: NuD of PFBN (R B MvI brsv)	----	0.01	µg/b	1.88	1.84	2.L	0% - 20%
v c 2122968-006	BEoECDous	v P241X: NuD of PFBN	----	0.01	µg/b	9.8p	11.0	10.L	0% - 20%
		v P241X: NuD of PFHxNaE5 PFUN	4SS-p6-p/1L64-24-1	0.01	µg/b	6.82	L.66	11.6	0% - 20%
		v P241X: NuD of PFBN (R B MvI brsv)	----	0.01	µg/b	9.00	10.0	10.8	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The qualnyC AoEyrol yerD c eyho5 / bat orayorC WaEd refers yo aE aEalOye free Dayrnx yo whrnAh all reageEys are a55e5 rE yhe saDe rnoluDes or 7ro7oryroEs as use5 rE syaE5ar5 saD7le 7re7arayroE. The 7ur7ose of yhrs Qi 7araDeyer rs yo DoEryor 7oyeEyral lat orayorC AoEyaDrEayroE. The qualnyC AoEyrol yerD bat orayorC i oEyrol NaD7le (bi N) refers yo a Aeryfre5 refereEAe Dayernal3 or a dEowE rEyerfereEAe free Dayrnx s7rde5 wnyh yargey aEalOyes. The 7ur7ose of yhrs Qi 7araDeyer rs yo DoEryor Deyho5 7reArsroE aE5 aAAuraACrE5e7eE5eEyof saD7le Dayrnx. MCEaDrA l eAomerCbrDns are t ase5 oE syaysryAal emaluayroE of 7roAesse5 bi N.

Nut -c ayrnx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4028919)								
v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4LS-L4-S	0.02	µg/b	<0.02	0.222 µg/b	88.4	L2.0	140
v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2L06-91-p	0.02	µg/b	<0.02	0.24S µg/b	L9.0	L1.0	12L
v P241X: PerfluorohexaEe sulfoErAaAr5 (PFHxN)	4SS-p6-p	0.01	µg/b	<0.01	0.228 µg/b	L8.6	68.0	141
v P241X: Perfluorohe7yaEe sulfoErAaAr5 (PFH7N)	4LS-92-8	0.02	µg/b	<0.02	0.2S µg/b	84.9	69.0	14p
v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1L64-24-1	0.01	µg/b	<0.01	0.242 µg/b	86.6	6S.0	1p0
v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-LL-4	0.02	µg/b	<0.02	0.2p1 µg/b	81.6	S4.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4028919)								
v P241X: Perfluorot uyaEorAaAr5 (PFWB)	4LS-22-p	0.1	µg/b	<0.1	1.2S µg/b	8S.S	L4.0	129
v P241X: Perfluoro7eEyaEorAaAr5 (PFPeB)	2L06-90-4	0.02	µg/b	<0.02	0.2S µg/b	84.L	L2.0	129
v P241X: PerfluorohexaEorAaAr5 (PFHxB)	40L-2p-p	0.02	µg/b	<0.02	0.2S µg/b	LS.1	L2.0	129
v P241X: Perfluorohe7yaEorAaAr5 (PFH7B)	4LS-8S-9	0.02	µg/b	<0.02	0.2S µg/b	86.1	L2.0	140
v P241X: PerfluorooAyaEorAaAr5 (PFUB)	44S-6L-1	0.01	µg/b	<0.01	0.2S µg/b	8p.6	L1.0	144
v P241X: PerfluoroEoEaEorAaAr5 (PFOB)	4LS-9S-1	0.02	µg/b	<0.02	0.2S µg/b	8S.1	69.0	140
v P241X: Perfluoro5eAaEorAaAr5 (PFMB)	44S-L6-2	0.02	µg/b	<0.02	0.2S µg/b	82.1	L1.0	129
v P241X: PerfluorouE5eAaEorAaAr5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	0.2S µg/b	9p.0	69.0	144
v P241X: Perfluoro5o5eAaEorAaAr5 (PFMoMB)	40L-SS-1	0.02	µg/b	<0.02	0.2S µg/b	82.2	L2.0	14p
v P241X: Perfluoryr5eAaEorAaAr5 (PFTrMB)	L2629-9p-8	0.02	µg/b	<0.02	0.2S µg/b	L9.L	6S.0	1pp
v P241X: Perfluoryeyra5eAaEorAaAr5 (PFTeMB)	4L6-06-L	0.0S	µg/b	<0.0S	0.94LS µg/b	8p.p	L1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4028919)								
v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	LSp-91-6	0.02	µg/b	<0.02	0.2S µg/b	82.0	6L.0	14L
v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S06-42-8	0.0S	µg/b	<0.0S	0.62S µg/b	10L	68.0	1p1
v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	0.62S µg/b	90.2	L0.0	140
v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (c eFUNv)	2ppp8-09-L	0.0S	µg/b	<0.0S	0.62S µg/b	89.p	L0.0	140
v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (v yFUNv)	1691-99-2	0.0S	µg/b	<0.0S	0.62S µg/b	92.8	L0.0	140
v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oaAeyrAaAr5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	0.2S µg/b	112	6S.0	146
v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oaAeyrAaAr5 (v yFUNBB)	2991-S0-6	0.02	µg/b	<0.02	0.2S µg/b	116	61.0	14S
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4028919)								
v P241X: p:2 FluoroyeloDer sulfoErAaAr5 (p:2 FTN)	LSL12p-L2-p	0.0S	µg/b	<0.0S	0.24p µg/b	80.p	64.0	1p4
v P241X: 6:2 FluoroyeloDer sulfoErAaAr5 (6:2 FTN)	2L619-9L-2	0.0S	µg/b	<0.0S	0.248 µg/b	L0.6	6p.0	1p0
v P241X: 8:2 FluoroyeloDer sulfoErAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	0.2p µg/b	92.p	6L.0	148

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4028919) - continued								
v P241X: 10:2 FluoroyeloDer sulfoEnAaAn5 (10:2 FTN)	120226-60-0	0.0S	µg/b	<0.0S	0.2p2 µg/b	L4.1	L0.0	140
EP231P: PFAS Sums (QCLot: 4028919)								
v P241X: NuD of PFBN	----	0.01	µg/b	<0.01	----	----	----	----
v P241X: NuD of PFHxN aE5 PFUN	4SS-p6-p/1L 64-24-1	0.01	µg/b	<0.01	----	----	----	----
v P241X: NuD of PFBN (R B MvI brsy)	----	0.01	µg/b	<0.01	----	----	----	----

Matrix Spike (MS) Report

The qualnyC AoEyrol yerD c ayrx N7rde (c N) refers yo aE rEyralat orayorC s7lry saD7le s7rde5 wnyh a re7reseEyayme sey of yargey aEalOyes. The 7ur7ose of yhrs Qi 7araDeyer rs yo DoEnyor 7oyeEyal Dayrx effeAys oE aEalOye reAomerres. NyayAI eAomerCbrDns as 7er lat orayorCMaya QualnyCUt jeAymes (MQUs). I5eal reAomerCraEges syaye5 DaCt e warre5 rE yhe emeEyof saD7le Dayrx rEyerfereEAe.

Nut -c ayrx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4028919)							
v c 2122968-002	BEoECDous	v P241X: Perfluorot uyaEe sulfoEnAaAn5 (PFWN)	4LS-L4-S	0.222 µg/b	9S.6	L2.0	140
		v P241X: Perfluoro7eEyaEe sulfoEnAaAn5 (PFPeN)	2L06-91-p	0.24S µg/b	12p	L1.0	12L
		v P241X: PerfluorohexaEe sulfoEnAaAn5 (PFHxN)	4SS-p6-p	0.228 µg/b	# Ooy MeyerDnEe5	68.0	141
		v P241X: Perfluorohe7yaEe sulfoEnAaAn5 (PFH7N)	4LS-92-8	0.248 µg/b	LS.1	69.0	14p
		v P241X: PerfluorooAyaEe sulfoEnAaAn5 (PFUN)	1L64-24-1	0.242 µg/b	# Ooy MeyerDnEe5	6S.0	1p0
		v P241X: Perfluoro5eAaEe sulfoEnAaAn5 (PFMN)	44S-LL-4	0.2p1 µg/b	6L.p	S4.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4028919)							
v c 2122968-002	BEoECDous	v P241X: Perfluorot uyaEomAaAn5 (PFWB)	4LS-22-p	1.2S µg/b	98.1	L4.0	129
		v P241X: Perfluoro7eEyaEomAaAn5 (PFPeB)	2L06-90-4	0.2S µg/b	82.1	L2.0	129
		v P241X: PerfluorohexaEomAaAn5 (PFHxB)	40L-2p-p	0.2S µg/b	94.S	L2.0	129
		v P241X: Perfluorohe7yaEomAaAn5 (PFH7B)	4LS-8S-9	0.2S µg/b	89.L	L2.0	140
		v P241X: PerfluorooAyaEomAaAn5 (PFUB)	44S-6L-1	0.2S µg/b	80.8	L1.0	144
		v P241X: PerfluoroEoEaEomAaAn5 (PFOB)	4LS-9S-1	0.2S µg/b	91.1	69.0	140
		v P241X: Perfluoro5eAaEomAaAn5 (PFMB)	44S-L6-2	0.2S µg/b	L2.1	L1.0	129
		v P241X: PerfluorouE5eAaEomAaAn5 (PFVEMB)	20S8-9p-8	0.2S µg/b	9L.8	69.0	144
		v P241X: Perfluoro5o5eAaEomAaAn5 (PFMoMB)	40L-SS-1	0.2S µg/b	86.9	L2.0	14p
		v P241X: Perfluoroyr5eAaEomAaAn5 (PFTrMB)	L2629-9p-8	0.2S µg/b	11p	6S.0	1pp
		v P241X: Perfluoroyeyra5eAaEomAaAn5 (PFTeMB)	4L6-06-L	0.94LS µg/b	102	L1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4028919)							
v c 2122968-002	BEoECDous	v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	LSp-91-6	0.2S µg/b	86.p	6L.0	14L

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4028919) - continued							
v c 2122968-002	BEoECDous	v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S06-42-8	0.62S µg/b	10S	68.0	1p1
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.62S µg/b	102	L0.0	140
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (c eFUNv)	2ppp8-09-L	0.62S µg/b	11L	L0.0	140
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (v yFUNv)	1691-99-2	0.62S µg/b	90.p	L0.0	140
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oaAeynA aAr5 (c eFUNBB)	24SS-41-9	0.2S µg/b	128	6S.0	146
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oaAeynA aAr5 (v yFUNBB)	2991-S0-6	0.2S µg/b	121	61.0	14S
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4028919)							
v c 2122968-002	BEoECDous	v P241X: p:2 FluoroyeloDer sulfoEnAaAr5 (p:2 FTN)	LSL12p-L2-p	0.24p µg/b	101	64.0	1p4
		v P241X: 6:2 FluoroyeloDer sulfoEnAaAr5 (6:2 FTN)	2L619-9L-2	0.248 µg/b	9p.p	6p.0	1p0
		v P241X: 8:2 FluoroyeloDer sulfoEnAaAr5 (8:2 FTN)	49108-4p-p	0.2p µg/b	118	6L.0	148
		v P241X: 10:2 FluoroyeloDer sulfoEnAaAr5 (10:2 FTN)	120226-60-0	0.2p2 µg/b	L2.6	L0.0	140

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2122969**	Page	: 1 of 8
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0884_PFASOMP	Date Samples Received	: 15-Nov-2021
Site	: P02	Issue Date	: 28-Nov-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: -	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the 7 uality Control Q C(Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrik: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroal) yl Sulfonic Acids	EM2122965--002	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	344-86-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroal) yl Sulfonic Acids	EM2122965--002	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1x63-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or ektracted outside of recommended holding times, this should be ta) en into consideration when interpreting results.

This report summarizes ektraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 586, APHA, AS and NEPM(based on the sample container provided. Dates reported represent first date of ektraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any(is provided herein.

Holding time for leachate methods (e.g. TCLP(vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 18 days, mercury 25 days & other metals 150 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is x days; others 18 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not) ey analytes of interest/concern.

Matrik: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0884_OTH019_211114	**15-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0884_OTH019_211114	**15-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0884_OTH019_211114	**15-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0884_OTH019_211114	**15-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0884_OTH019_211114	**15-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory 7 C samples analysed within the analytical lot3(in which the submitted sample3(was3were(processed. Actual rate should be greater than or equal to the ekpected rate. A listing of breaches is provided in the Summary of Outliers.

Matrik: **WATER**

Evaluation: × = 7 uality Control frequency not within specification ; ✓ = 7 uality Control frequency within specification.

7 uality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates 0UP(							
Per- and Polyfluoroal) yl Substances 0PFAS(by LCMSMS	EP231X	2	15	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS 7 C Standard
Laboratory Control Samples 0LCS(							
Per- and Polyfluoroal) yl Substances 0PFAS(by LCMSMS	EP231X	1	15	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS 7 C Standard
Method Blan) s 0MB(							
Per- and Polyfluoroal) yl Substances 0PFAS(by LCMSMS	EP231X	1	15	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS 7 C Standard
Matrik Spi) es 0MS(							
Per- and Polyfluoroal) yl Substances 0PFAS(by LCMSMS	EP231X	1	15	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS 7 C Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroal) yl Substances QPFAS(by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Ektraction QSPE(followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase ektraction QSPE(cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted ektract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD 7 SM 4.3, table B-14 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Ektraction QSPE(for PFAS in water	ORGx2	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase ektraction QSPE(cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted ektract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD 7 SM 4.3, table B-14 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EM2122558	Page	: 1 of 29
AD eVdD eVP	: 1		
Client	: CARi NO t ICTORIA nTY LTi	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 18-Nov-2021 16:25
Order number	: -	Date Analysis Commenced	: 25-Nov-2021
C-O-C number	: 30112	Issue Date	: 14-Jan-2022 12:07
Sampler	: [redacted]		
Site	: Base		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 57		
No. of samples analysed	: 54		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

AddaRoVI f aVrorDI RoV perRVeVP Ro Rhas reporP waff be rouVd aV Rhe roffowaVg sepI rI Re I RRchDeVRs: QuI faRy CoVRrof ReporP, QA/QC CoDpfa Vce AssessDeVP Ro I ssasP waRh QuI faRy RevæwI Vd SI Dpfe ReceapPNoRaeI RoV.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
[redacted]	LCMS Coordinator	Melbourne Organics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (14/1/22):This report has been amended following a correction to the PFAS Sum for sample #16. All other results unchanged.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNi WATER (Matrix: WATER)			Sample ID	044_6MW005621111x	044_6MW01x621111x	044_6MW018621111x	044_6MW020621111x	044_6MW094621111x
			Sampling date / time	16-Nov-2021 12:42	16-Nov-2021 13:16	16-Nov-2021 13:49	16-Nov-2021 12:20	16-Nov-2021 12:42
Compound	CAS Number	LOR	Unit	EM2122558-001	EM2122558-002	EM2122558-009	EM2122558-004	EM2122558-00_
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	**0.5_**	**0.40**	**0.0x**	**0.1_**	**0.2x**
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	**0.8x**	**0.40**	**0.0_**	**0.1x**	**0.21**
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	**4.14**	**9.04**	**0.9_**	**1.84**	**1.x0**
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	**0.4_**	**0.2_**	<0.02	**0.05**	**0.19**
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**2.x7**	**4.98**	**0.92**	**1._4**	**1.8x**
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En2913: nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	**0.2**	<0.1	<0.1	<0.1	<0.1
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	**0.94**	**0.1x**	<0.02	**0.0_**	**0.05**
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	**1.9x**	**0.x8**	<0.02	**0.29**	**0.94**
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	**0.2_**	**0.1_**	<0.02	**0.09**	**0.0x**
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	**0.49**	**0.91**	<0.01	**0.07**	**0.12**
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroPadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroRPl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVl Dades								
nerrfuoroocR Ve sufroVl Dade (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVl Dade (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dade (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNi WATER (Matrix: WATER)			Sample ID	044_6MW005621111x	044_6MW01x621111x	044_6MW018621111x	044_6MW020621111x	044_6MW094621111x
			Sampling date / time	16-Nov-2021 12:42	16-Nov-2021 13:16	16-Nov-2021 13:49	16-Nov-2021 12:20	16-Nov-2021 12:42
Compound	CAS Number	LOR	Unit	EM2122558-001	EM2122558-002	EM2122558-009	EM2122558-004	EM2122558-00_
				Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVl Dades - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVl DatoeRhl Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl DatoeRhl Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVl Datol ceRc l cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVl Datol ceRc l cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoD er SufroVac Acals								
4:2 FfuoroRefoD er sufroVac l cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoD er sufroVac l cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FfuoroRefoD er sufroVac l cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FfuoroRefoD er sufroVac l cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291n: nFAS SuD s								
SuD omnFAS	----	0.01	µg/L	**11.x**	**5.77**	**0.78**	**4.1x**	**4.x7**
SuD omnFHBS l Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	**x.81**	**7.42**	**0.x7**	**9.98**	**9.4x**
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L	**10.9**	**5.12**	**0.79**	**9.51**	**4.99**
En291S: nFAS SurrogI Re								
19C4-nFOS	----	0.02	%	**54.1**	**104**	**10_**	**10_**	**108**
19C8-nFOA	----	0.02	%	**101**	**55.x**	**102**	**102**	**109**

Analytical Results

Sub-Matrix: GROUNi WATER (Matrix: WATER)			Sample ID	044_6MW09_621111x	044_6MW049621111x	044_6MW04x6i 62111 1x	044_6MW04x6I62111 1x	044_6MW0_2621111x
			Sampling date / time	16-Nov-2021 13:02	16-Nov-2021 12:41	16-Nov-2021 12:52	16-Nov-2021 12:53	16-Nov-2021 14:48
Compound	CAS Number	LOR	Unit	EM2122558-00x	EM2122558-007	EM2122558-008	EM2122558-005	EM2122558-010
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acads								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	**0.59**	**1.x0**	**0.40**	**0.98**	**0.5x**
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	**0.87**	**1.79**	**0.28**	**0.90**	**0.8x**
nerrfuoroheBI Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	**4.19**	**7._4**	**2.2x**	**2.90**	**9.81**
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	**0.95**	**0.81**	**0.15**	**0.15**	**0._0**
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**9.92**	**_.99**	**9.24**	**2.5x**	**7.29**
nerrfuorodecI Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En2913: nerrfuorol fkyf Cl rboByfac Acads								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	**0.2**	**0.4**	<0.1	<0.1	**0.9**
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	**0.94**	**0.x1**	**0.1x**	**0.1_**	**0.95**
nerrfuoroheBI Voac I cad (nFHBA)	307-24-4	0.02	µg/L	**1.41**	**2._1**	**0._2**	**0._0**	**1.x0**
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	**0.2x**	**0.49**	**0.10**	**0.05**	**0.9x**
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	**0.4_**	**0.7x**	**0.15**	**0.17**	**0.x7**
nerrfuoroVoVI Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorodecI Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorouVdecI Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorododecI Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroRadecI Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroReRI decI Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVI Dades								
nerrfuoroocR Ve sufroVI Dade (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVI Dade (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVI Dade (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNi WATER (Matrix: WATER)			Sample ID	044_6MW09_621111x	044_6MW049621111x	044_6MW04x6i 62111 1x	044_6MW04x6l62111 1x	044_6MW0_2621111x
			Sampling date / time	16-Nov-2021 13:02	16-Nov-2021 12:41	16-Nov-2021 12:52	16-Nov-2021 12:53	16-Nov-2021 14:48
Compound	CAS Number	LOR	Unit	EM2122558-00x	EM2122558-007	EM2122558-008	EM2122558-005	EM2122558-010
				Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVI Dades - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhl Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhl Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVI Datol ceRac I cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVI Datol ceRac I cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoDer SufroVac Acads								
4:2 FfuoroRefoDer sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoDer sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	**0.1x**	**0.11**	**0.05**	<0.05
8:2 FfuoroRefoDer sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FfuoroRefoDer sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291n: nFAS SuDs								
SuD ormFAS	----	0.01	µg/L	**12.9**	**21.5**	**7.4_**	**7.19**	**1x.7**
SuD ormFHBSI Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	**7.4_**	**12.5**	**_._0**	**_.2x**	**11.0**
SuD ormFAS (WA i ER LasR)	----	0.01	µg/L	**11.0**	**15.9**	**x.58**	**x.x4**	**1_.9**
En291S: nFAS Surrogl Re								
19C4-nFOS	----	0.02	%	**5_.2**	**101**	**10x**	**58.9**	**59._**
19C8-nFOA	----	0.02	%	**101**	**100**	**101**	**109**	**55.8**

Analytical Results

Sub-Matrix: GROUNi WATER (Matrix: WATER)			Sample ID	044_6MW9116211117	044_6MW91_6211117	044_6MW94_6211117	044_6MW94x6211117	044_6MW9_1621111x
			Sampling date / time	17-Nov-2021 08:59	17-Nov-2021 15:35	17-Nov-2021 12:40	16-Nov-2021 08:08	16-Nov-2021 13:55
Compound	CAS Number	LOR	Unit	EM2122558-011	EM2122558-012	EM2122558-019	EM2122558-014	EM2122558-01_
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	<0.02	**0.0x**	<0.02	<0.02
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	<0.02	**0.0_**	<0.02	<0.02
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	<0.01	<0.01	**0.29**	<0.01	**0.01**
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	**0.02**	<0.01	**0.01**
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En2913: nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroPadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroReRl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVl Dacles								
nerrfuoroocR Ve sufroVl Dacle (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVl Dacle (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dacle (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNi WATER (Matrix: WATER)			Sample ID	044_6MW9116211117	044_6MW91_6211117	044_6MW94_6211117	044_6MW94x6211117	044_6MW9_1621111x
			Sampling date / time	17-Nov-2021 08:59	17-Nov-2021 15:35	17-Nov-2021 12:40	16-Nov-2021 08:08	16-Nov-2021 13:55
Compound	CAS Number	LOR	Unit	EM2122558-011	EM2122558-012	EM2122558-019	EM2122558-014	EM2122558-01_
				Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVI Dades - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRc I cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRc I cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoD er SufroVac Acads								
4:2 FfuoroRefoD er sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoD er sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FfuoroRefoD er sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FfuoroRefoD er sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291n: nFAS SuD s								
SuD omnFAS	----	0.01	µg/L	<0.01	<0.01	**0.9x**	<0.01	**0.02**
SuD omnFHBS I Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	**0.2_**	<0.01	**0.02**
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L	<0.01	<0.01	**0.91**	<0.01	**0.02**
En291S: nFAS SurrogI Re								
19C4-nFOS	----	0.02	%	**52.8**	**10x**	**102**	**52._**	**10x**
19C8-nFOA	----	0.02	%	**109**	**100**	**100**	**101**	**101**

Analytical Results

Sub-Matrix: GROUNi WATER (Matrix: WATER)			Sample ID	044_6MW9_2621111x	044_6MW9_4621111x	----	----	----
			Sampling date / time	16-Nov-2021 13:42	16-Nov-2021 14:08	----	----	----
Compound	CAS Number	LOR	Unit	EM2122558-01x	EM2122558-017	-------	-------	-------
				Result	Result	----	----	----
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	**0.04**	----	----	----
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	**0.09**	----	----	----
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	<0.01	**0.29**	----	----	----
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**0.01**	**0.1_**	----	----	----
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
En2913 : nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	<0.02	**0.04**	----	----	----
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	<0.01	**0.01**	----	----	----
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroRadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroReRl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
En291C: nerrfuorol fkyf SufroVl Dacles								
nerrfuoroocR Ve sufroVl Dacle (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-MeRhyf perrfuoroocR Ve sufroVl Dacle (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----
N-ERhyf perrfuoroocR Ve sufroVl Dacle (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: GROUNi WATER (Matrix: WATER)			Sample ID	044_6MW9_2621111x	044_6MW9_4621111x	----	----	----
			Sampling date / time	16-Nov-2021 13:42	16-Nov-2021 14:08	----	----	----
Compound	CAS Number	LOR	Unit	EM2122558-01x	EM2122558-017	-------	-------	-------
				Result	Result	----	----	----
En291C: nerrfuorol fkyf SufroVI Dacles - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	----	----	----
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	----	----	----
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	----	----	----
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	----	----	----
En291i : (V:2) FfuoroRefoD er SufroVac Acals								
4:2 FfuoroRefoD er sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
x:2 FfuoroRefoD er sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 FfuoroRefoD er sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 FfuoroRefoD er sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
En291n: nFAS SuD s								
SuD omnFAS	----	0.01	µg/L	**0.01**	**0._0**	----	----	----
SuD omnFHBS I Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	**0.01**	**0.98**	----	----	----
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L	**0.01**	**0.47**	----	----	----
En291S: nFAS SurrogI Re								
19C4-nFOS	----	0.02	%	**101**	**5x.5**	----	----	----
19C8-nFOA	----	0.02	%	**55.1**	**55.5**	----	----	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)			Sample ID	044_6QC910621111_	044_6QC911621111x	044_6QC9146211117	----	----
			Sampling date / time	17-Nov-2021 14:36	16-Nov-2021 14:40	17-Nov-2021 14:44	----	----
Compound	CAS Number	LOR	Unit	EM2122558-0_0	EM2122558-0_1	EM2122558-0_4	--------	--------
				Result	Result	Result	----	----
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	----	----
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
En2913 : nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuoroPadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
nerrfuoroRPl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
En291C: nerrfuorol fkyf SufroVl Dacles								
nerrfuoroocR Ve sufroVl Dacle (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-MeRhyf perrfuoroocR Ve sufroVl Dacle (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-ERhyf perrfuoroocR Ve sufroVl Dacle (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)				Sample ID	044_6QC910621111_	044_6QC911621111x	044_6QC9146211117	----	----
				Sampling date / time	17-Nov-2021 14:36	16-Nov-2021 14:40	17-Nov-2021 14:44	----	----
Compound	CAS Number	LOR	Unit		EM2122558-0_0	EM2122558-0_1	EM2122558-0_4	--------	--------
					Result	Result	Result	----	----
En291C: nerrfuorol fkyf SufroVI Dacles - CoVRaVued									
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (ERFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
En291i : (V:2) FfuoroRefoD er SufroVac Acals									
4:2 FfuoroRefoD er sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
x:2 FfuoroRefoD er sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 FfuoroRefoD er sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 FfuoroRefoD er sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
En291n: nFAS SuD s									
SuD omnFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	----	----
SuD omnFHBSI Vd nFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L		<0.01	<0.01	<0.01	----	----
En291S: nFAS SurrogI Re									
19C4-nFOS	----	0.02	%		100	104	58.9	----	----
19C8-nFOA	----	0.02	%		57.4	58.9	59.9	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6SW9076211117	044_6SW9106211117	044_6SW9116211117	044_6SW9196211117	044_6SW91x6211117
			Sampling date / time	17-Nov-2021 10:20	17-Nov-2021 09:21	17-Nov-2021 09:17	17-Nov-2021 08:58	17-Nov-2021 09:09
Compound	CAS Number	LOR	Unit	EM2122558-018	EM2122558-015	EM2122558-020	EM2122558-021	EM2122558-022
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	<0.02	**0.09**	**0.10**	**0.04**
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	<0.02	**0.02**	**0.0x**	**0.09**
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	**0.10**	**0.21**	**0.41**	**1.90**	**0._0**
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	**0.09**	**0.07**	**0.02**
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**0.07**	**0.11**	**1.7_**	**9.19**	**0._2**
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En2913: nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	**0.1**	<0.1
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**0.04**	**0.91**	**0.04**
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	<0.02	<0.02	**0.0x**	**0.44**	**0.07**
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	**0.11**	<0.02
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**0.09**	**0.90**	**0.02**
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	**0.18**	<0.02
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroPadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroReRl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVl Dacles								
nerrfuoroocR Ve sufroVl Dacle (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVl Dacle (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dacle (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6SW9076211117	044_6SW9106211117	044_6SW9116211117	044_6SW9196211117	044_6SW91x6211117
			Sampling date / time	17-Nov-2021 10:20	17-Nov-2021 09:21	17-Nov-2021 09:17	17-Nov-2021 08:58	17-Nov-2021 09:09
Compound	CAS Number	LOR	Unit	EM2122558-018	EM2122558-015	EM2122558-020	EM2122558-021	EM2122558-022
				Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVI Dades - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRc I cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRc I cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoD er SufroVac Acads								
4:2 FfuoroRefoD er sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoD er sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FfuoroRefoD er sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FfuoroRefoD er sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291n: nFAS SuD s								
SuD omnFAS	----	0.01	µg/L	**0.17**	**0.92**	**2.97**	**x.10**	**1.24**
SuD omnFHBS I Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	**0.17**	**0.92**	**2.1x**	**4.49**	**1.02**
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L	**0.17**	**0.92**	**2.92**	**_.75**	**1.15**
En291S: nFAS SurrogI Re								
19C4-nFOS	----	0.02	%	**101**	**102**	**100**	**58._**	**102**
19C8-nFOA	----	0.02	%	**109**	**102**	**101**	**102**	**102**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6SW9216211117	044_6SW9226211117	044_6SW9296211117	044_6SW9246211117	044_6SW92x6211117
			Sampling date / time	17-Nov-2021 08:51	17-Nov-2021 14:07	17-Nov-2021 11:29	17-Nov-2021 08:31	17-Nov-2021 10:42
Compound	CAS Number	LOR	Unit	EM2122558-029	EM2122558-024	EM2122558-02_	EM2122558-02x	EM2122558-027
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	**0.1x**	**0.1x**	**0.02**	**0.0x**	**0.22**
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	**0.1x**	**0.1x**	<0.02	**0.0_**	**0.15**
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	**2.92**	**2.10**	**0.28**	**0.7_**	**2.14**
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	**0.10**	**0.08**	<0.02	**0.04**	**0.22**
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**9.48**	**2.98**	**0.xx**	**1.8x**	**7.55**
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.07**
En2913: nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	**0.2**
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	**0.0x**	**0.0_**	**0.04**	**0.10**	**0.97**
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	**0.9_**	**0.91**	**0.0x**	**0.17**	**0.x9**
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	**0.09**	**0.09**	<0.02	**0.0_**	**0.15**
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	**0.05**	**0.07**	**0.09**	**0.10**	**0.98**
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	**0.02**	**0.04**
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroPadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroRPl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVl Dades								
nerrfuoroocR Ve sufroVl Dade (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVl Dade (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dade (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	044_6SW9216211117	044_6SW9226211117	044_6SW9296211117	044_6SW9246211117	044_6SW92x6211117
				Sampling date / time	17-Nov-2021 08:51	17-Nov-2021 14:07	17-Nov-2021 11:29	17-Nov-2021 08:31	17-Nov-2021 10:42
Compound	CAS Number	LOR	Unit		EM2122558-029	EM2122558-024	EM2122558-02_	EM2122558-02x	EM2122558-027
					Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVI Dacles - CoVRaVued									
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (ERFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoDer SufroVac Acals									
4:2 FfuoroRefoDer sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoDer sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.45**
8:2 FfuoroRefoDer sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.11**
10:2 FfuoroRefoDer sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
En291n: nFAS SuDs									
SuDomnFAS	----	0.01	µg/L		**x.7_**	**_.94**	**1.05**	**9.20**	**19.2**
SuDomnFHBSI Vd nFOS	355-46-4/1763-23-1	0.01	µg/L		**_.80**	**4.48**	**0.54**	**2.x1**	**10.1**
SuDomnFAS (WAi ER LasR)	----	0.01	µg/L		**x.45**	**_.10**	**1.05**	**9.05**	**12.7**
En291S: nFAS SurrogI Re									
19C4-nFOS	----	0.02	%		**52.7**	**85.x**	**59.2**	**5_.8**	**57.9**
19C8-nFOA	----	0.02	%		**101**	**55._**	**101**	**107**	**102**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6SW9926211117	044_6SW9996211117	044_6SW99x621111_	044_6SW94x6211117	044_6SW945621111_
			Sampling date / time	17-Nov-2021 11:12	17-Nov-2021 11:05	15-Nov-2021 08:16	17-Nov-2021 12:30	16-Nov-2021 08:15
Compound	CAS Number	LOR	Unit	EM2122558-028	EM2122558-025	EM2122558-090	EM2122558-091	EM2122558-092
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	**0.07**	**0.0x**	**0.04**	**0.04**
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	**0.0_**	**0.0_**	**0.09**	**0.09**
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	**0.02**	**0.40**	**0.42**	**0.21**	**0.21**
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	**0.0_**	<0.02	<0.02
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**0.02**	**0.44**	**7.25**	**0.79**	**0.x1**
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	**0.15**	<0.02	<0.02
En2913: nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	<0.02	**0.07**	**0.10**	**0.07**	**0.0x**
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	<0.02	**0.19**	**0.2x**	**0.08**	**0.08**
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	**0.10**	**0.09**	**0.02**
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	<0.01	**0.09**	**0.20**	**0.04**	**0.04**
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	**0.1_**	<0.02	<0.02
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	**0.1x**	<0.02	<0.02
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	**0.10**	<0.02	<0.02
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	**0.02**	<0.02	<0.02
nerrfuoroPadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroReRl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVl Dades								
nerrfuoroocR Ve sufroVl Dade (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	**0.09**	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVl Dade (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dade (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6SW9926211117	044_6SW9996211117	044_6SW99x621111_	044_6SW94x6211117	044_6SW945621111_
			Sampling date / time	17-Nov-2021 11:12	17-Nov-2021 11:05	15-Nov-2021 08:16	17-Nov-2021 12:30	16-Nov-2021 08:15
Compound	CAS Number	LOR	Unit	EM2122558-028	EM2122558-025	EM2122558-090	EM2122558-091	EM2122558-092
				Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVl Dades - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVl Dadoe Rhl Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dadoe Rhl Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVl Dadol ceRac l cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVl Dadol ceRac l cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoD er SufroVac Acads								
4:2 FfuoroRefoD er sufroVac l cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoD er sufroVac l cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	**0.9_**	<0.05	<0.05
8:2 FfuoroRefoD er sufroVac l cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	**0.89**	<0.05	<0.05
10:2 FfuoroRefoD er sufroVac l cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	**0.14**	<0.05	<0.05
En291n: nFAS SuD s								
SuD omnFAS	----	0.01	µg/L	**0.04**	**1.15**	**10._**	**1.29**	**1.05**
SuD omnFHBS l Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	**0.04**	**0.84**	**7.71**	**0.54**	**0.82**
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L	**0.04**	**1.14**	**5.x1**	**1.20**	**1.0x**
En291S: nFAS Surrogl Re								
19C4-nFOS	----	0.02	%	**100**	**101**	**55.5**	**55.4**	**5x.8**
19C8-nFOA	----	0.02	%	**102**	**109**	**102**	**101**	**58.7**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6SW9__6211117	044_6SW9706211117	044_6SW9746211117	044_6SW97_6211117	044_6SW97562111x
			Sampling date / time	17-Nov-2021 15:50	17-Nov-2021 13:36	17-Nov-2021 12:48	17-Nov-2021 11:42	16-Nov-2021 15:00
Compound	CAS Number	LOR	Unit	EM2122558-099	EM2122558-094	EM2122558-09_	EM2122558-09x	EM2122558-097
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.1_**
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.04**
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	**0.08**	**0.08**	**0.04**	**0.0x**	**0.17**
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**0.22**	**0.22**	**0.19**	**0.05**	**0.41**
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.02**
En2913 : nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	**0.1**
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	**0.02**	<0.02	<0.02	<0.02	**0.07**
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	**0.09**	**0.02**	<0.02	<0.02	**0.05**
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	**0.01**	**0.01**	<0.01	<0.01	**0.02**
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroPadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroReRl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVl Dacles								
nerrfuoroocR Ve sufroVl Dacle (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVl Dacle (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dacle (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6SW9__6211117	044_6SW9706211117	044_6SW9746211117	044_6SW97_6211117	044_6SW97562111x
			Sampling date / time	17-Nov-2021 15:50	17-Nov-2021 13:36	17-Nov-2021 12:48	17-Nov-2021 11:42	16-Nov-2021 15:00
Compound	CAS Number	LOR	Unit	EM2122558-099	EM2122558-094	EM2122558-09_	EM2122558-09x	EM2122558-097
				Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVI Dacles - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoD er SufroVac Acals								
4:2 FfuoroRefoD er sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoD er sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FfuoroRefoD er sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FfuoroRefoD er sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291n: nFAS SuD s								
SuD omnFAS	----	0.01	µg/L	**0.9x**	**0.99**	**0.17**	**0.1_**	**1.07**
SuD omnFHBS I Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	**0.90**	**0.90**	**0.17**	**0.1_**	**0._8**
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L	**0.9x**	**0.99**	**0.17**	**0.1_**	**1.01**
En291S: nFAS SurrogI Re								
19C4-nFOS	----	0.02	%	**57.x**	**102**	**80.0**	**55.9**	**58.5**
19C8-nFOA	----	0.02	%	**55.4**	**101**	**87.1**	**101**	**57.9**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6SW982621111x	044_6SW987621111x	044_6SW988621111x	044_6SW448621111_	044_6QC10x621111_
			Sampling date / time	17-Nov-2021 07:53	16-Nov-2021 09:55	16-Nov-2021 09:54	16-Nov-2021 08:10	16-Nov-2021 08:13
Compound	CAS Number	LOR	Unit	EM2122558-098	EM2122558-095	EM2122558-040	EM2122558-041	EM2122558-042
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	**0.09**	**0.04**	**0.0x**	**0.0_**
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	**0.0_**	**0.02**
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	<0.01	**0.1_**	**0.20**	**1.14**	**0.18**
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	**0.04**	<0.02
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	<0.01	**0.0x**	**0.28**	**2.05**	**0.__**
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En2913: nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cal (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
nerrfuoropeVR Voac I cal (nFneA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	**0.12**	**0.0x**
nerrfuoroheBl Voac I cal (nFHBA)	307-24-4	0.02	µg/L	<0.02	<0.02	**0.02**	**0.2_**	**0.08**
nerrfuorohepR Voac I cal (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	**0.09**	**0.02**
nerrfuoroocR Voac I cal (nFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	**0.07**	**0.04**
nerrfuoroVoVl Voac I cal (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorodecl Voac I cal (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorouVdecl Voac I cal (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorododecl Voac I cal (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroPadecl Voac I cal (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroReRl decl Voac I cal (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVl Dacles								
nerrfuoroocR Ve sufroVl Dacle (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVl Dacle (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dacle (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	044_6SW982621111x	044_6SW987621111x	044_6SW988621111x	044_6SW448621111_	044_6QC10x621111_
				Sampling date / time	17-Nov-2021 07:53	16-Nov-2021 09:55	16-Nov-2021 09:54	16-Nov-2021 08:10	16-Nov-2021 08:13
Compound	CAS Number	LOR	Unit		EM2122558-098	EM2122558-095	EM2122558-040	EM2122558-041	EM2122558-042
					Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVI Dades - CoVRaVued									
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRc I cad (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRc I cad (ERFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoD er SufroVac Acads									
4:2 FfuoroRefoD er sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoD er sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FfuoroRefoD er sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FfuoroRefoD er sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
En291n: nFAS SuD s									
SuD omnFAS	----	0.01	µg/L		<0.01	**0.24**	**0._4**	**9.8_**	**1.00**
SuD omnFHBS I Vd nFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.21**	**0.48**	**9.29**	**0.79**
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L		<0.01	**0.24**	**0._4**	**9.7x**	**0.58**
En291S: nFAS SurrogI Re									
19C4-nFOS	----	0.02	%		**109**	**101**	**110**	**108**	**58.8**
19C8-nFOA	----	0.02	%		**58.8**	**101**	**5x.4**	**52.8**	**57.9**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6QC1076211117	044_6QC108621111_	044_6QC1106211117	044_6QC1126211117	044_6QC105621111x
			Sampling date / time	16-Nov-2021 08:14	16-Nov-2021 08:15	17-Nov-2021 08:32	17-Nov-2021 08:52	16-Nov-2021 14:01
Compound	CAS Number	LOR	Unit	EM2122558-049	EM2122558-044	EM2122558-04_	EM2122558-04x	EM2122558-047
				Result	Result	Result	Result	Result
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	**0.04**	**0.0x**	**0.18**	<0.02
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	**0.09**	**0.04**	**0.17**	<0.02
nerrfuoroheBl Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	**0.08**	**0._2**	**0.x2**	**2.9x**	<0.01
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	**0.02**	**0.09**	**0.10**	<0.02
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**0.21**	**0.74**	**1.x1**	**9.88**	<0.01
nerrfuorodecl Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En2913: nerrfuorol fkyf Cl rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	**0.02**	**0.09**	**0.10**	**0.0_**	<0.02
nerrfuoroheBl Voac I cad (nFHBA)	307-24-4	0.02	µg/L	**0.09**	**0.05**	**0.1_**	**0.9x**	<0.02
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	**0.04**	**0.09**	<0.02
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	**0.02**	**0.09**	**0.08**	**0.08**	<0.01
nerrfuoroVoVl Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorodecl Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorouVdecl Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuorododecl Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroPadecl Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
nerrfuoroRPl decl Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291C: nerrfuorol fkyf SufroVl Dacles								
nerrfuoroocR Ve sufroVl Dacle (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-MeRhyf perrfuoroocR Ve sufroVl Dacle (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dacle (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6QC1076211117	044_6QC108621111_	044_6QC1106211117	044_6QC1126211117	044_6QC105621111x
			Sampling date / time	16-Nov-2021 08:14	16-Nov-2021 08:15	17-Nov-2021 08:32	17-Nov-2021 08:52	16-Nov-2021 14:01
Compound	CAS Number	LOR	Unit	EM2122558-049	EM2122558-044	EM2122558-04_	EM2122558-04x	EM2122558-047
				Result	Result	Result	Result	Result
En291C: nerrfuorol fkyf SufroVl Dades - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVl Dadoe Rhl Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-ERhyf perrfuoroocR Ve sufroVl Dadoe Rhl Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-MeRhyf perrfuoroocR Ve sufroVl Dadol ceRac l cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-ERhyf perrfuoroocR Ve sufroVl Dadol ceRac l cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
En291i : (V:2) FfuoroRefoD er SufroVac Acads								
4:2 FfuoroRefoD er sufroVac l cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
x:2 FfuoroRefoD er sufroVac l cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FfuoroRefoD er sufroVac l cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FfuoroRefoD er sufroVac l cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
En291n: nFAS SuD s								
SuD omnFAS	----	0.01	µg/L	**0.9x**	**1._0**	**2.79**	**7.21**	<0.01
SuD omnFHBS l Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	**0.25**	**1.2x**	**2.29**	**x.24**	<0.01
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L	**0.9x**	**1.4_**	**2.xx**	**x.54**	<0.01
En291S: nFAS Surrogl Re								
19C4-nFOS	----	0.02	%	**55.x**	**108**	**55.2**	**104**	**101**
19C8-nFOA	----	0.02	%	**58.7**	**55.x**	**55._**	**57.5**	**5_.x**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	044_6QC1116211117	044_6SW4046211117	----	----	----
			Sampling date / time	17-Nov-2021 08:58	17-Nov-2021 15:41	----	----	----
Compound	CAS Number	LOR	Unit	EM2122558-048	EM2122558-0_7	-------	-------	-------
				Result	Result	----	----	----
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	**0.10**	<0.02	----	----	----
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	**0.07**	<0.02	----	----	----
nerrfuoroheBI Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	**1.28**	<0.01	----	----	----
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	**0.0x**	<0.02	----	----	----
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	**9.8_**	<0.01	----	----	----
nerrfuorodecI Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
En2913 : nerrfuorol fkyf CI rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	**0.1**	<0.1	----	----	----
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	**0.99**	<0.02	----	----	----
nerrfuoroheBI Voac I cad (nFHBA)	307-24-4	0.02	µg/L	**0.48**	<0.02	----	----	----
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	**0.11**	<0.02	----	----	----
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	**0.90**	<0.01	----	----	----
nerrfuoroVoVI Voac I cad (nFNA)	375-95-1	0.02	µg/L	**0.15**	<0.02	----	----	----
nerrfuorodecI Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorouVdecI Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorododecI Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroRadecI Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroReRI decI Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
En291C: nerrfuorol fkyf SufroVI Dades								
nerrfuoroocR Ve sufroVI Dade (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-MeRhyf perrfuoroocR Ve sufroVI Dade (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----
N-ERhyf perrfuoroocR Ve sufroVI Dade (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	044_6QC1116211117	044_6SW4046211117	----	----	----
				Sampling date / time	17-Nov-2021 08:58	17-Nov-2021 15:41	----	----	----
Compound	CAS Number	LOR	Unit		EM2122558-048	EM2122558-0_7	-------	-------	-------
					Result	Result	----	----	----
En291C: nerrfuorol fkyf SufroVI Dacles - CoVRaVued									
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (ERFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
En291i : (V:2) FfuoroRefoD er SufroVac Acads									
4:2 FfuoroRefoD er sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
x:2 FfuoroRefoD er sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 FfuoroRefoD er sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 FfuoroRefoD er sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
En291n: nFAS SuD s									
SuD omnFAS	----	0.01	µg/L		x.87	<0.01	----	----	----
SuD omnFHBS I Vd nFOS	355-46-4/1763-23-1	0.01	µg/L		_.19	<0.01	----	----	----
SuD omnFAS (WA i ER LasR)	----	0.01	µg/L		x.__	<0.01	----	----	----
En291S: nFAS SurrogI Re									
19C4-nFOS	----	0.02	%		109	54.x	----	----	----
19C8-nFOA	----	0.02	%		54.x	5x.x	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	044_6QC_09621111_	044_6QC_04621111x	----	----	----
			Sampling date / time	15-Nov-2021 14:46	16-Nov-2021 14:47	----	----	----
Compound	CAS Number	LOR	Unit	EM2122558-0__	EM2122558-0_x	--------	--------	--------
				Result	Result	----	----	----
En291A: nerrfuorol fkyf SufroVac Acals								
nerrfuorobuR Ve sufroVac I cad (nF3 S)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoropeVR Ve sufroVac I cad (nFneS)	2706-91-4	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroheBI Ve sufroVac I cad (nFHBS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	----	----
nerrfuorohepR Ve sufroVac I cad (nFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroocR Ve sufroVac I cad (nFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	----	----	----
nerrfuorodecI Ve sufroVac I cad (nFi S)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
En2913 : nerrfuorol fkyf CI rboByfac Acals								
nerrfuorobuR Voac I cad (nF3 A)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
nerrfuoropeVR Voac I cad (nFneA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroheBI Voac I cad (nFHBA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorohepR Voac I cad (nFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroocR Voac I cad (nFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	----	----
nerrfuoroVoVI Voac I cad (nFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorodecI Voac I cad (nFi A)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorouVdecI Voac I cad (nFUVi A)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuorododecI Voac I cad (nFi oi A)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroRadecI Voac I cad (nFTri A)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
nerrfuoroReRI decI Voac I cad (nFTei A)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
En291C: nerrfuorol fkyf SufroVI Dades								
nerrfuoroocR Ve sufroVI Dade (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-MeRhyf perrfuoroocR Ve sufroVI Dade (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----
N-ERhyf perrfuoroocR Ve sufroVI Dade (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	044_6QC_09621111_	044_6QC_04621111x	----	----	----
			Sampling date / time	15-Nov-2021 14:46	16-Nov-2021 14:47	----	----	----
Compound	CAS Number	LOR	Unit	EM2122558-0__	EM2122558-0_x	-------	-------	-------
				Result	Result	----	----	----
En291C: nerrfuorol fkyf SufroVI Dacles - CoVRaVued								
N-MeRhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	----	----	----
N-ERhyf perrfuoroocR Ve sufroVI DatoeRhI Vof (ERFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	----	----	----
N-MeRhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	----	----	----
N-ERhyf perrfuoroocR Ve sufroVI DatoI ceRac I cad (ERFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	----	----	----
En291i : (V:2) FfuoroRefoDer SufroVac Acals								
4:2 FfuoroRefoDer sufroVac I cad (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
x:2 FfuoroRefoDer sufroVac I cad (x:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 FfuoroRefoDer sufroVac I cad (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 FfuoroRefoDer sufroVac I cad (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
En291n: nFAS SuDs								
SuDomnFAS	----	0.01	µg/L	<0.01	<0.01	----	----	----
SuDomnFHBSI Vd nFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	----	----	----
SuDomnFAS (WAi ER LasR)	----	0.01	µg/L	<0.01	<0.01	----	----	----
En291S: nFAS SurrogI Re								
19C4-nFOS	----	0.02	%	**57.4**	**105**	----	----	----
19C8-nFOA	----	0.02	%	**54._**	**55.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: GROUNi WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
En291S: nFAS Surrogl Re			
19C4-nFOS	----	65	140
19C8-nFOA	----	71	133

Sub-Matrix: RINSATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
En291S: nFAS Surrogl Re			
19C4-nFOS	----	65	140
19C8-nFOA	----	71	133

Sub-Matrix: SURFACE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
En291S: nFAS Surrogl Re			
19C4-nFOS	----	65	140
19C8-nFOA	----	71	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
En291S: nFAS Surrogl Re			
19C4-nFOS	----	65	140
19C8-nFOA	----	71	133

CHAIN OF CUSTODY

(ALS) COC#: 30112 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comments:			

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_MW009_211116		16/11/2021 12:42 PM	Water	ALS: 2 Non ALS: 0	No		X		
002	0445_MW016_211116		16/11/2021 01:16 PM	Water	ALS: 2 Non ALS: 0	No		X		
003	0445_MW018_211116		16/11/2021 01:49 PM	Water	ALS: 2 Non ALS: 0	No		X		
004	0445_MW020_211116		16/11/2021 12:20 PM	Water	ALS: 2 Non ALS: 0	No		X		
005	0445_MW034_211116		16/11/2021 12:42 PM	Water	ALS: 2 Non ALS: 0	No		X		
006	0445_MW035_211116		16/11/2021 01:02 PM	Water	ALS: 2 Non ALS: 0	No		X		
007	0445_MW043_211116		16/11/2021 12:41 PM	Water	ALS: 2 Non ALS: 0	No		X		
008	0445_MW046_D_211116	~~EM2122998~~	16/11/2021 12:52 PM	Water	ALS: 2 Non ALS: 0	No		X		
009	0445_MW046_I_211116		16/11/2021 12:53 PM	Water	ALS: 2 Non ALS: 0	No		X		

~~missing 46150 (EM2122998)~~

Environmental Division
Melbourne
Work Order Reference
EM2122998

Telephone : +61-3-8549 9600

CHAIN OF CUSTODY

ALS COC#: 30112 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_MW052_211116		16/11/2021 02:48 PM	Water	ALS: 2 Non ALS: 0	No		X		
011	0445_MW311_211117		17/11/2021 08:59 AM	Water	ALS: 2 Non ALS: 0	No		X		
012	0445_MW315_211117		17/11/2021 03:35 PM	Water	ALS: 2 Non ALS: 0	No		X		
013	0445_MW345_211117		17/11/2021 12:40 PM	Water	ALS: 2 Non ALS: 0	No		X		
014	0445_MW346_211117		16/11/2021 08:08 AM	Water	ALS: 2 Non ALS: 0	No		X		
015	0445_MW351_211116		16/11/2021 01:55 PM	Water	ALS: 2 Non ALS: 0	No		X		
016	0445_MW352_211116		16/11/2021 01:42 PM	Water	ALS: 2 Non ALS: 0	No		X		
017	0445_MW354_211116		16/11/2021 02:08 PM	Water	ALS: 2 Non ALS: 0	No		X		
018	0445_SW307_211117		17/11/2021 10:20 AM	Water	ALS: 2 Non ALS: 0	No		X		

CHAIN OF CUSTODY

ALS COC#: 30112 ALS Laboratory: EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
019	0445_SW310_211117		17/11/2021 09:21 AM	Water	ALS: 2 Non ALS: 0	No		X		
020	0445_SW311_211117		17/11/2021 09:17 AM	Water	ALS: 2 Non ALS: 0	No		X		
021	0445_SW313_211117		17/11/2021 08:58 AM	Water	ALS: 2 Non ALS: 0	No		X		
022	0445_SW316_211117		17/11/2021 09:09 AM	Water	ALS: 2 Non ALS: 0	No		X		
023	0445_SW321_211117		17/11/2021 08:51 AM	Water	ALS: 2 Non ALS: 0	No		X		
024	0445_SW322_211117		17/11/2021 02:07 PM	Water	ALS: 2 Non ALS: 0	No		X		
025	0445_SW323_211117		17/11/2021 11:29 AM	Water	ALS: 2 Non ALS: 0	No		X		
026	0445_SW324_211117		17/11/2021 08:31 AM	Water	ALS: 2 Non ALS: 0	No		X		
027	0445_SW326_211117		17/11/2021 10:42 AM	Water	ALS: 2 Non ALS: 0	No		X		

CHAIN OF CUSTODY

ALS COC#: 30112 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
028	0445_SW332_211117		17/11/2021 11:12 AM	Water	ALS: 2 Non ALS: 0	No		X		
029	0445_SW333_211117		17/11/2021 11:05 AM	Water	ALS: 2 Non ALS: 0	No		X		
030	0445_SW336_211115		15/11/2021 08:16 AM	Water	ALS: 2 Non ALS: 0	No		X		
031	0445_SW346_211117		17/11/2021 12:30 PM	Water	ALS: 2 Non ALS: 0	No		X		
032	0445_SW349_211115		16/11/2021 08:15 AM	Water	ALS: 2 Non ALS: 0	No		X		
033	0445_SW355_211117		17/11/2021 03:50 PM	Water	ALS: 2 Non ALS: 0	No		X		
034	0445_SW370_211117		17/11/2021 01:36 PM	Water	ALS: 2 Non ALS: 0	No		X		
035	0445_SW374_211117		17/11/2021 12:48 PM	Water	ALS: 2 Non ALS: 0	No		X		
036	0445_SW375_211117		17/11/2021 11:42 AM	Water	ALS: 2 Non ALS: 0	No		X		

CHAIN OF CUSTODY

(ALS) COC#: 30112 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

EMAIL REPORTS TO:

EMAIL INVOICES TO:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
037	0445_SW379_211116		16/11/2021 03:00 PM	Water	ALS: 2 Non ALS: 0	No		X		
038	0445_SW382_211116		17/11/2021 07:53 AM	Water	ALS: 2 Non ALS: 0	No		X		
039	0445_SW387_211116		16/11/2021 09:55 AM	Water	ALS: 2 Non ALS: 0	No		X		
040	0445_SW388_211116		16/11/2021 09:54 AM	Water	ALS: 2 Non ALS: 0	No		X		
041	0445_SW448_211115		16/11/2021 08:10 AM	Water	ALS: 2 Non ALS: 0	No		X		
042	0445_QC106_211115	EM22998	16/11/2021 08:13 AM	Water	ALS: 2 Non ALS: 0	No		X		
043	0445_QC107_211117		16/11/2021 08:14 AM	Water	ALS: 2 Non ALS: 0	No		X		
044	0445_QC108_211115		16/11/2021 08:15 AM	Water	ALS: 2 Non ALS: 0	No		X		
045	0445_QC110_211117		17/11/2021 08:32 AM	Water	ALS: 2 Non ALS: 0	No		X		

CHAIN OF CUSTODY

ALS COC#: 30112 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
046	0445_QC112_211117		17/11/2021 08:52 AM	Water	ALS: 2 Non ALS: 0	No		X		
047	0445_QC109_211116		16/11/2021 02:01 PM	Water	ALS: 2 Non ALS: 0	No		X		
048	0445_QC111_211117		17/11/2021 08:58 AM	Water	ALS: 2 Non ALS: 0	No		X		
049	0445_QC309_211115		17/11/2021 02:30 PM	Water	ALS: 2 Non ALS: 0	Yes	-			
050	0445_QC310_211115		17/11/2021 02:36 PM	Water	ALS: 2 Non ALS: 0	No		X		
051	0445_QC311_211116		16/11/2021 02:40 PM	Water	ALS: 2 Non ALS: 0	No		X		
052	0445_QC312_211116		16/11/2021 02:41 PM	Water	ALS: 2 Non ALS: 0	Yes	-			
053	0445_QC313_211117		17/11/2021 02:43 PM	Water	ALS: 2 Non ALS: 0	Yes	-			
054	0445_QC314_211117		17/11/2021 02:44 PM	Water	ALS: 2 Non ALS: 0	No		X		

CHAIN OF CUSTODY

COC#: 30112 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
055	0445_QC503_211115		15/11/2021 02:46 PM	Water	ALS: 2 Non ALS: 0	No		X		
056	0445_QC504_211116		16/11/2021 02:47 PM	Water	ALS: 2 Non ALS: 0	No		X		
057	0445_SW404_211117		17/11/2021 03:41 PM	Water	ALS: 2 Non ALS: 0	No		X		

CHAIN OF CUSTODY

ALS COC#: 30112 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0445_MW009_211116	HDPE (no PTFE)	20 mL	00352101048272	Grey	No	
001	0445_MW009_211116	HDPE (no PTFE)	20 mL	00352101048209	Grey	No	
002	0445_MW016_211116	HDPE (no PTFE)	20 mL	00352101023902	Grey	No	
002	0445_MW016_211116	HDPE (no PTFE)	20 mL	00352101043338	Grey	No	
003	0445_MW018_211116	HDPE (no PTFE)	20 mL	00352101030914	Grey	No	
003	0445_MW018_211116	HDPE (no PTFE)	20 mL	00352101030468	Grey	No	
004	0445_MW020_211116	HDPE (no PTFE)	20 mL	00352101030725	Grey	No	
004	0445_MW020_211116	HDPE (no PTFE)	20 mL	00352101030518	Grey	No	
005	0445_MW034_211116	HDPE (no PTFE)	20 mL	00352101030841	Grey	No	
005	0445_MW034_211116	HDPE (no PTFE)	20 mL	00352101030428	Grey	No	
006	0445_MW035_211116	HDPE (no PTFE)	20 mL	00352101048411	Grey	No	
006	0445_MW035_211116	HDPE (no PTFE)	20 mL	00352101048289	Grey	No	
007	0445_MW043_211116	HDPE (no PTFE)	20 mL	00352101048379	Grey	No	
007	0445_MW043_211116	HDPE (no PTFE)	20 mL	00352101048083	Grey	No	
008	0445_MW046_D_211116	HDPE (no PTFE)	20 mL	00352101030711	Grey	No	
008	0445_MW046_D_211116	HDPE (no PTFE)	20 mL	00352101030486	Grey	No	
009	0445_MW046_I_211116	HDPE (no PTFE)	20 mL	00352101030727	Grey	No	
009	0445_MW046_I_211116	HDPE (no PTFE)	20 mL	00352101030993	Grey	No	
010	0445_MW052_211116	HDPE (no PTFE)	20 mL	00352101048371	Grey	No	
010	0445_MW052_211116	HDPE (no PTFE)	20 mL	00352101028680	Grey	No	
011	0445_MW311_211117	HDPE (no PTFE)	20 mL	00352101023923	Grey	No	
011	0445_MW311_211117	HDPE (no PTFE)	20 mL	00352101023961	Grey	No	
012	0445_MW315_211117	HDPE (no PTFE)	20 mL	00352101048282	Grey	No	
012	0445_MW315_211117	HDPE (no PTFE)	20 mL	00352101028780	Grey	No	
013	0445_MW345_211117	HDPE (no PTFE)	20 mL	00352101030770	Grey	No	
013	0445_MW345_211117	HDPE (no PTFE)	20 mL	00352101030572	Grey	No	

CHAIN OF CUSTODY

ALS COC#: 30112 ALS Laboratory: EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

014	0445_MW346_211117	HDPE (no PTFE)	20 mL	0035210103056 4	Grey	No	
014	0445_MW346_211117	HDPE (no PTFE)	20 mL	0035210103067 2	Grey	No	
015	0445_MW351_211116	HDPE (no PTFE)	20 mL	0035210104332 5	Grey	No	
015	0445_MW351_211116	HDPE (no PTFE)	20 mL	0035210102392 8	Grey	No	
016	0445_MW352_211116	HDPE (no PTFE)	20 mL	0035210104844 0	Grey	No	
016	0445_MW352_211116	HDPE (no PTFE)	20 mL	0035210102861 6	Grey	No	
017	0445_MW354_211116	HDPE (no PTFE)	20 mL	0035210103075 7	Grey	No	
017	0445_MW354_211116	HDPE (no PTFE)	20 mL	0035210103053 6	Grey	No	
018	0445_SW307_211117	HDPE (no PTFE)	20 mL	0035210104803 3	Grey	No	
018	0445_SW307_211117	HDPE (no PTFE)	20 mL	0035210104805 1	Grey	No	
019	0445_SW310_211117	HDPE (no PTFE)	20 mL	0035210103096 5	Grey	No	
019	0445_SW310_211117	HDPE (no PTFE)	20 mL	0035210103081 6	Grey	No	
020	0445_SW311_211117	HDPE (no PTFE)	20 mL	0035210104349 4	Grey	No	
020	0445_SW311_211117	HDPE (no PTFE)	20 mL	0035210104346 9	Grey	No	
021	0445_SW313_211117	HDPE (no PTFE)	20 mL	0035210102878 3	Grey	No	
021	0445_SW313_211117	HDPE (no PTFE)	20 mL	0035210104835 4	Grey	No	
022	0445_SW316_211117	HDPE (no PTFE)	20 mL	0035210103092 9	Grey	No	
022	0445_SW316_211117	HDPE (no PTFE)	20 mL	0035210103083 2	Grey	No	
023	0445_SW321_211117	HDPE (no PTFE)	20 mL	0035210103086 2	Grey	No	
023	0445_SW321_211117	HDPE (no PTFE)	20 mL	0035210103064 4	Grey	No	
024	0445_SW322_211117	HDPE (no PTFE)	20 mL	0035210104821 8	Grey	No	
024	0445_SW322_211117	HDPE (no PTFE)	20 mL	0035210104824 0	Grey	No	
025	0445_SW323_211117	HDPE (no PTFE)	20 mL	0035210102376 9	Grey	No	
025	0445_SW323_211117	HDPE (no PTFE)	20 mL	0035210102381 1	Grey	No	
026	0445_SW324_211117	HDPE (no PTFE)	20 mL	0035210103090 5	Grey	No	
026	0445_SW324_211117	HDPE (no PTFE)	20 mL	0035210103106 7	Grey	No	
027	0445_SW326_211117	HDPE (no PTFE)	20 mL	0035210104846 2	Grey	No	

CHAIN OF CUSTODY

(ALS) COC#: 30112 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

027	0445_SW326_211117	HDPE (no PTFE)	20 mL	00352101048286	Grey	No	
028	0445_SW332_211117	HDPE (no PTFE)	20 mL	00352101048239	Grey	No	
028	0445_SW332_211117	HDPE (no PTFE)	20 mL	00352101048241	Grey	No	
029	0445_SW333_211117	HDPE (no PTFE)	20 mL	00352101023913	Grey	No	
029	0445_SW333_211117	HDPE (no PTFE)	20 mL	00352101043422	Grey	No	
030	0445_SW336_211115	HDPE (no PTFE)	20 mL	00352101048395	Grey	No	
030	0445_SW336_211115	HDPE (no PTFE)	20 mL	00352101048052	Grey	No	
031	0445_SW346_211117	HDPE (no PTFE)	20 mL	00352101028614	Grey	No	
031	0445_SW346_211117	HDPE (no PTFE)	20 mL	00352101048443	Grey	No	
032	0445_SW349_211115	HDPE (no PTFE)	20 mL	00352101030738	Grey	No	
032	0445_SW349_211115	HDPE (no PTFE)	20 mL	00352101030723	Grey	No	
033	0445_SW355_211117	HDPE (no PTFE)	20 mL	00352101030535	Grey	No	
033	0445_SW355_211117	HDPE (no PTFE)	20 mL	00352101030502	Grey	No	
034	0445_SW370_211117	HDPE (no PTFE)	20 mL	00352101043544	Grey	No	
034	0445_SW370_211117	HDPE (no PTFE)	20 mL	00352101043417	Grey	No	
035	0445_SW374_211117	HDPE (no PTFE)	20 mL	00352101028712	Grey	No	
035	0445_SW374_211117	HDPE (no PTFE)	20 mL	00352101048100	Grey	No	
036	0445_SW375_211117	HDPE (no PTFE)	20 mL	00352101030629	Grey	No	
036	0445_SW375_211117	HDPE (no PTFE)	20 mL	00352101030606	Grey	No	
037	0445_SW379_21116	HDPE (no PTFE)	20 mL	00352101043449	Grey	No	
037	0445_SW379_21116	HDPE (no PTFE)	20 mL	00352101043305	Grey	No	
038	0445_SW382_211116	HDPE (no PTFE)	20 mL	00352101043486	Grey	No	
038	0445_SW382_211116	HDPE (no PTFE)	20 mL	00352101043259	Grey	No	
039	0445_SW387_211116	HDPE (no PTFE)	20 mL	00352101023937	Grey	No	
039	0445_SW387_211116	HDPE (no PTFE)	20 mL	00352101043294	Grey	No	
040	0445_SW388_211116	HDPE (no PTFE)	20 mL	00352101043258	Grey	No	
040	0445_SW388_211116	HDPE (no PTFE)	20 mL	00352101043565	Grey	No	

CHAIN OF CUSTODY

ALS COC#: 30112 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

041	0445_SW448_211115	HDPE (no PTFE)	20 mL	00352101028598	Grey	No	
041	0445_SW448_211115	HDPE (no PTFE)	20 mL	00352101048368	Grey	No	
042	0445_QC106_211115	HDPE (no PTFE)	20 mL	00352101030578	Grey	No	
042	0445_QC106_211115	HDPE (no PTFE)	20 mL	00352101030470	Grey	No	
043	0445_QC107_211117	HDPE (no PTFE)	20 mL	00352101030463	Grey	No	
043	0445_QC107_211117	HDPE (no PTFE)	20 mL	00352101030424	Grey	No	
044	0445_QC108_211115	HDPE (no PTFE)	20 mL	00352101030919	Grey	No	
044	0445_QC108_211115	HDPE (no PTFE)	20 mL	00352101030913	Grey	No	
045	0445_QC110_211117	HDPE (no PTFE)	20 mL	00352101030891	Grey	No	
045	0445_QC110_211117	HDPE (no PTFE)	20 mL	00352101030730	Grey	No	
046	0445_QC112_211117	HDPE (no PTFE)	20 mL	00352101031078	Grey	No	
046	0445_QC112_211117	HDPE (no PTFE)	20 mL	00352101030623	Grey	No	
047	0445_QC109_211116	HDPE (no PTFE)	20 mL	00352101023783	Grey	No	
047	0445_QC109_211116	HDPE (no PTFE)	20 mL	00352101043329	Grey	No	
048	0445_QC111_211117	HDPE (no PTFE)	20 mL	00352101043416	Grey	No	
048	0445_QC111_211117	HDPE (no PTFE)	20 mL	00352101043386	Grey	No	
049	0445_QC309_211115	HDPE (no PTFE)	20 mL	00352101043447	Grey	No	
049	0445_QC309_211115	HDPE (no PTFE)	20 mL	00352101043434	Grey	No	
050	0445_QC310_211115	HDPE (no PTFE)	20 mL	00352101048477	Grey	No	
050	0445_QC310_211115	HDPE (no PTFE)	20 mL	00352101048118	Grey	No	
051	0445_QC311_211116	HDPE (no PTFE)	20 mL	00352101043382	Grey	No	
051	0445_QC311_211116	HDPE (no PTFE)	20 mL	00352101043220	Grey	No	
052	0445_QC312_211116	HDPE (no PTFE)	20 mL	00352101023780	Grey	No	
052	0445_QC312_211116	HDPE (no PTFE)	20 mL	00352101023746	Grey	No	
053	0445_QC313_211117	HDPE (no PTFE)	20 mL	00352101048469	Grey	No	
053	0445_QC313_211117	HDPE (no PTFE)	20 mL	00352101028636	Grey	No	
054	0445_QC314_211117	HDPE (no PTFE)	20 mL	00352101028705	Grey	No	

CHAIN OF CUSTODY

ALS COC#: 30112 ALS Laboratory: EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Base

ORDER NO:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

054	0445_QC314_211117	HDPE (no PTFE)	20 mL	0035210104838 3	Grey	No	
055	0445_QC503_211115	HDPE (no PTFE)	20 mL	0035210104829 8	Grey	No	
055	0445_QC503_211115	HDPE (no PTFE)	20 mL	0035210104838 7	Grey	No	
056	0445_QC504_211116	HDPE (no PTFE)	20 mL	0035210104845 7	Grey	No	
056	0445_QC504_211116	HDPE (no PTFE)	20 mL	0035210102859 3	Grey	No	
057	0445_SW404_211117	HDPE (no PTFE)	20 mL	0035210104836 4	Grey	No	
057	0445_SW404_211117	HDPE (no PTFE)	20 mL	0035210104817 1	Grey	No	

Total Bottle Count: ALS: 114, Non ALS: 0

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2122998**	Page	: o f Lb
Amendment	: **1**		
nIEevC	: **CARDNO VICTORIA PTY LTD**	t ayf raCri	: mvDEf vMevGal c EDsEEv A elyf urve
n f vGaBC	: [redacted]	n f vGaBC	: [redacted]
WSSress	: [redacted]	WSSress	: [redacted]
Teleh- f ve	: 6666	Teleh- f ve	: [redacted]
Prf _eBC	: 3 Hn 2077N2PFWOV A P	c aGe OaMhles I eBeEDeS	: o96Uf D6101o
VrSer vuMyer	: 6	c aGe VWali sEs n f MMevBeS	: 1N6Uf D6101o
n6V6n vuMyer	: p0oo1	Hssue c aGe	: o76dav61011
OaMhler	: [redacted]		
OKGe	: Rase		
Quf Ge vuMyer	: OY/opj /oj 2RavSEava		
Uf . f LsaMhles reBeEDeS	: N-		
Uf . f LsaMhles avali seS	: N7		

T-Es rehf rC suherseSes avi hreDEus rehf rQs) wEC GEs relerevBe. I esulGs ahhli Ct Ge saMhle(s) as suyMKGeS4 uvless Ge saMhlEvg was BfvSuBGeS yi Wt O. T-Es Sf BuMevC s-all vf Cye rehrf SuBeS4exBehCEv Lull.

T-Es QualKC nf vCf I I ehf rCBf vGaEvs Ge Lf llf wEvg Ev Lf rMaCEv:

- t ayf raCri cuhlBaGe (c , P) I ehf rC, I elaCDe PerBevGage c ELerevBe (I Pc) avS WBBehGavBe t EMKs
- A eGf S Rlav5 (AR) avS t ayf raCri nf vCf I OhE5e (t n O) I ehf rC, I eBf Deri avS WBBehGavBe t EMKs
- A aCEx OhE5e (A O) I ehf rC, I eBf Deri avS WBBehGavBe t EMKs

Signatories

T-Es Sf BuMevC- as yeev eleBCf vBalli sEgveS yi Ge auCf rEeS sEgvaCrEes yelf w. mleBCf vBsEgvEvg Es BarrEeS f uCEv Bf MhlEavBe wEC hrf BeSures sheBEEeS Ev 1o n Fl ParCoo.

Signatories	*Position*	*Accreditation Category*
[redacted]	t n A O n f f rSEvaCr	A elyf urve VrgavBEs4OhrEvgDale43 Hn
[redacted]	OevEr VrgavBn - eMEsC	A elyf urve VrgavBEs4OhrEvgDale43 Hn

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

General Comments

T-e avali OBal hrf BeSures useS yi Wt O -aDe yeev SeDelf heS Lrf M esQayIs-eS EvQervaOEvalli reBf gvEseS hrf BeSures suB- as Gf se huylEs-eS yi Ge , OmPW4 WPk W4 WO avS UmPA. Hv -f use SeDelf heS hrf BeSures are Lulli DalESaQeS avS are f LQv aCGe BlEevCrequesC

I -ere Mf EsCure SeQerMEvaOEv -as yeev herLf rMeS4resulGs are rehf rQeS f v a Sri weEg-Cyasls.

I -ere a rehf rQeS less Gav (<) resulC Es -Eg-er Gav Ge t VI 4 GEs Mai ye Sue Ct hrfEMari saMhle exCaBCSEgesQaQe SfEuOEv avS/f r EvsuLLBfevC saMhle Lf r avali sEs. I -ere Ge t VI f L a rehf rQeS resulC SfELers Lrf M sQavSarS t VI 4GEs Mai ye Sue Ct -Eg- Mf EsCure Bf vQev4EvsuLLBfevCsaMhle (reSuBeS weEg-CeMhlf i eS) f r MaCfx EvQerLerevBe.

Kei : Wf vi Mf us = I eLers Ct saMhles w-fB- are vf CsheBfffBalli harCf LGEs wf r5 f rSer yuCLf rMeS harCf LGe Qn hrf Bess If C
n WO UuMyer = n WO regEsCi vuMyer Lrf M SaQayase MaEvQaEveS yi n-eMfBal WysCaBGs OerDBes. T-e n-eMfBal WysCaBGs OerDBe Es a SfDEsfEv f LGe WMerBav n-eMfBal Of BfeCt.
t VI = t EMfCf Lrehf rQEvg
I Pc = I elaOEe PerBevQage c fLerevBe
= HvStBaQes LafeS Qn

Laboratory Duplicate (DUP) Report

T-e qualfC Bf vCf I QerM tayf raCri cuhlfBaQe reLers Ct a ravSf Mli seleBQeS EvQalayf raCri shlfC tayf raCri SuhlfBaQes hrf DfSe EvLf rMaOEv regarSEvg MeGf S hreBfsfEv avS saMhle -eQrf gevefC. T-e herMfQeS ravges Lf r Ge I elaOEe PerBevC ceDaOEv (I Pc) f L tayf raCri cuhlfBaQes are sheBfffeS Ev Wt O AeGf S QI H6mU/p9 avS are SehevSevC f v Ge MagvfEQuSe f L resulGs Ev Bf Mharfsf v Ct Ge leDel f L rehf rQEvg: I esulC < o0 QEMes t VI : Uf t EMfC I esulCyeQveev o0 avS 10 QEMes t VI : 0% 6N0%; I esulC> 10 QEMes t VI : 0% 610%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

T-e qualEC BfvCfl CerM AeCfS / tayfraCri Rlav5 relers C av avali Ge Lree MaCEx C w-EB- all reagevGs are aSSeS Ev Ge saMe DfluMes f r hrf hf rCEvs as useS Ev sGvSarS saMhle hreharaCEv. T-e hurhf se f LGEs Qn haraMeGr Es C Mf vECr hf GevGal layfraCri BfvGaMEvraCEv. T-e qualEC BfvCfl CerM tayfraCri nfvCfl OaMhle (t nO) relers C a BerCEEeS relerevBe MaGerEal4 f r a 5vf wv EvGerLerevBe Lree MaCEx shE5eS wEs GargeC avali Ges. T-e hurhf se f LGEs Qn haraMeGr Es C Mf vECr MeGf S hreBEsEv avS aBEuraBi EvSehevSevCf LsaMhle MaCEx. c i vaMEBI eBf Deri t EMEs are yaseS f v sGaCEsEBal eDaluaCEv f Lhrf BesseS t n O.

Ouy6A aCEx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4035614)								
mP1poX: PerLluf rf yuGave sullf vEBaBES (PFRO)	p- N6- p6N	0.01	µg/t	<0.01	0.111 µg/t	o0p	- 1.0	op0
mP1poX: PerLluf rf hevGave sullf vEBaBES (PFPeO)	1- 0b6j o67	0.01	µg/t	<0.01	0.1pN µg/t	9- .-	- o.0	o1-
mP1poX: PerLluf rf - exave sullf vEBaBES (PFk xO)	pNN67b67	0.0o	µg/t	<0.0o	0.119 µg/t	j j .-	b9.0	opo
mP1poX: PerLluf rf - ehGave sullf vEBaBES (PFk hO)	p- N6j 169	0.01	µg/t	<0.01	0.1N µg/t	j 9.j	bj .0	op7
mP1poX: PerLluf rf f BGave sullf vEBaBES (PFVO)	o- bp61p6o	0.0o	µg/t	<0.0o	0.1p1 µg/t	j - .p	bN.0	o70
mP1poX: PerLluf rf SeBave sullf vEBaBES (PFc O)	ppN6- - 6p	0.01	µg/t	<0.01	0.17o µg/t	99.7	Np.0	o71
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4038409)								
mP1poX: PerLluf rf yuGave sullf vEBaBES (PFRO)	p- N6- p6N	0.01	µg/t	<0.01	0.111 µg/t	oop	- 1.0	op0
mP1poX: PerLluf rf hevGave sullf vEBaBES (PFPeO)	1- 0b6j o67	0.01	µg/t	<0.01	0.1pN µg/t	9j .j	- o.0	o1-
mP1poX: PerLluf rf - exave sullf vEBaBES (PFk xO)	pNN67b67	0.0o	µg/t	<0.0o	0.119 µg/t	o0p	b9.0	opo
mP1poX: PerLluf rf - ehGave sullf vEBaBES (PFk hO)	p- N6j 169	0.01	µg/t	<0.01	0.1N µg/t	o01	bj .0	op7
mP1poX: PerLluf rf f BGave sullf vEBaBES (PFVO)	o- bp61p6o	0.0o	µg/t	<0.0o	0.1p1 µg/t	o07	bN.0	o70
mP1poX: PerLluf rf SeBave sullf vEBaBES (PFc O)	ppN6- - 6p	0.01	µg/t	<0.01	0.17o µg/t	j o.1	Np.0	o71
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4038443)								
mP1poX: PerLluf rf yuGave sullf vEBaBES (PFRO)	p- N6- p6N	0.01	µg/t	<0.01	0.111 µg/t	ooN	- 1.0	op0
mP1poX: PerLluf rf hevGave sullf vEBaBES (PFPeO)	1- 0b6j o67	0.01	µg/t	<0.01	0.1pN µg/t	9- .N	- o.0	o1-
mP1poX: PerLluf rf - exave sullf vEBaBES (PFk xO)	pNN67b67	0.0o	µg/t	<0.0o	0.119 µg/t	j N.j	b9.0	opo
mP1poX: PerLluf rf - ehGave sullf vEBaBES (PFk hO)	p- N6j 169	0.01	µg/t	<0.01	0.1N µg/t	99.b	bj .0	op7
mP1poX: PerLluf rf f BGave sullf vEBaBES (PFVO)	o- bp61p6o	0.0o	µg/t	<0.0o	0.1p1 µg/t	j 0.0	bN.0	o70
mP1poX: PerLluf rf SeBave sullf vEBaBES (PFc O)	ppN6- - 6p	0.01	µg/t	<0.01	0.17o µg/t	97.N	Np.0	o71
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4035614)								
mP1poX: PerLluf rf yuGavf EBaBES (PFRW)	p- N61167	0.o	µg/t	<0.o	o.1N µg/t	j 9.0	- p.0	o1j
mP1poX: PerLluf rf hevGavf EBaBES (PFPeW)	1- 0b6j 06p	0.01	µg/t	<0.01	0.1N µg/t	o00	- 1.0	o1j
mP1poX: PerLluf rf - exavf EBaBES (PFk xW)	p0- 61767	0.01	µg/t	<0.01	0.1N µg/t	j 0.j	- 1.0	o1j
mP1poX: PerLluf rf - ehGavf EBaBES (PFk hW)	p- N69N6j	0.01	µg/t	<0.01	0.1N µg/t	o0b	- 1.0	op0
mP1poX: PerLluf rf f BGavf EBaBES (PFVW)	ppN6o- 6o	0.0o	µg/t	<0.0o	0.1N µg/t	j 1.0	- o.0	opp
mP1poX: PerLluf rf vf vavf EBaBES (PFUW)	p- N6j N6o	0.01	µg/t	<0.01	0.1N µg/t	j p.1	bj .0	op0
mP1poX: PerLluf rf SeBavf EBaBES (PFc W)	ppN6- b61	0.01	µg/t	<0.01	0.1N µg/t	j 0.-	- o.0	o1j
mP1poX: PerLluf rf uvSeBavf EBaBES (PF, vc W)	10N9Gj 769	0.01	µg/t	<0.01	0.1N µg/t	o0-	bj .0	opp
mP1poX: PerLluf rf Sf SeBavf EBaBES (PFc f c W)	p0- 6NN6o	0.01	µg/t	<0.01	0.1N µg/t	j b.0	- 1.0	op7
mP1poX: PerLluf rf CESeBavf EBaBES (PFTrc W)	- 1b1j 6j 769	0.01	µg/t	<0.01	0.1N µg/t	o01	bN.0	o77
mP1poX: PerLluf rf GeCaSeBavf EBaBES (PFTec W)	p- b60b6-	0.0N	µg/t	<0.0N	0.j p- N µg/t	o0N	- o.0	op1
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4038409)								
mP1poX: PerLluf rf yuGavf EBaBES (PFRW)	p- N61167	0.o	µg/t	<0.o	o.1N µg/t	j j .b	- p.0	o1j

Ouy6A aCE: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4038409) - continued								
mP1poX: PerLluf rf hevGavf tBaBtS (PFPeW)	1-0b6j 06p	0.01	µg/t	<0.01	0.1N µg/t	o07	- 1.0	o1j
mP1poX: PerLluf rf - exavf tBaBtS (PFk xW)	p0-61767	0.01	µg/t	<0.01	0.1N µg/t	j p.7	- 1.0	o1j
mP1poX: PerLluf rf - ehGavf tBaBtS (PFk hW)	p-N69N6j	0.01	µg/t	<0.01	0.1N µg/t	o0b	- 1.0	op0
mP1poX: PerLluf rf f BGavf tBaBtS (PFVW)	ppN6b-6o	0.0o	µg/t	<0.0o	0.1N µg/t	j j .N	- o.0	opp
mP1poX: PerLluf rf vf vavf tBaBtS (PFUW)	p-N6j N6o	0.01	µg/t	<0.01	0.1N µg/t	j j .p	bj .0	op0
mP1poX: PerLluf rf SeBavf tBaBtS (PFc W)	ppN6-b61	0.01	µg/t	<0.01	0.1N µg/t	j 7.o	- o.0	o1j
mP1poX: PerLluf rf uvSeBavf tBaBtS (PF, vc W)	10N9j 769	0.01	µg/t	<0.01	0.1N µg/t	o0b	bj .0	opp
mP1poX: PerLluf rf Sf SeBavf tBaBtS (PFc f c W)	p0-6NN6o	0.01	µg/t	<0.01	0.1N µg/t	j j .9	- 1.0	op7
mP1poX: PerLluf rf CtSeBavf tBaBtS (PFTrc W)	-1b1j 6j 769	0.01	µg/t	<0.01	0.1N µg/t	o0N	bN.0	o77
mP1poX: PerLluf rf GeCaSeBavf tBaBtS (PFTec W)	p-b60b6-	0.0N	µg/t	<0.0N	0.j p-N µg/t	o0b	- o.0	op1
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4038443)								
mP1poX: PerLluf rf yuGavf tBaBtS (PFRW)	p-N61167	0.o	µg/t	<0.o	o.1N µg/t	j 9.7	- p.0	o1j
mP1poX: PerLluf rf hevGavf tBaBtS (PFPeW)	1-0b6j 06p	0.01	µg/t	<0.01	0.1N µg/t	o00.0	- 1.0	o1j
mP1poX: PerLluf rf - exavf tBaBtS (PFk xW)	p0-61767	0.01	µg/t	<0.01	0.1N µg/t	j 0.-	- 1.0	o1j
mP1poX: PerLluf rf - ehGavf tBaBtS (PFk hW)	p-N69N6j	0.01	µg/t	<0.01	0.1N µg/t	9j .9	- 1.0	op0
mP1poX: PerLluf rf f BGavf tBaBtS (PFVW)	ppN6b-6o	0.0o	µg/t	<0.0o	0.1N µg/t	j 1.b	- o.0	opp
mP1poX: PerLluf rf vf vavf tBaBtS (PFUW)	p-N6j N6o	0.01	µg/t	<0.01	0.1N µg/t	j o.b	bj .0	op0
mP1poX: PerLluf rf SeBavf tBaBtS (PFc W)	ppN6-b61	0.01	µg/t	<0.01	0.1N µg/t	9-.9	- o.0	o1j
mP1poX: PerLluf rf uvSeBavf tBaBtS (PF, vc W)	10N9j 769	0.01	µg/t	<0.01	0.1N µg/t	j N.1	bj .0	opp
mP1poX: PerLluf rf Sf SeBavf tBaBtS (PFc f c W)	p0-6NN6o	0.01	µg/t	<0.01	0.1N µg/t	9j .N	- 1.0	op7
mP1poX: PerLluf rf CtSeBavf tBaBtS (PFTrc W)	-1b1j 6j 769	0.01	µg/t	<0.01	0.1N µg/t	j b.9	bN.0	o77
mP1poX: PerLluf rf GeCaSeBavf tBaBtS (PFTec W)	p-b60b6-	0.0N	µg/t	<0.0N	0.j p-N µg/t	o0b	- o.0	op1
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4035614)								
mP1poX: PerLluf rf f BGave sullf vaMtSe (FVOW)	-N76j o6o	0.01	µg/t	<0.01	0.1N µg/t	j 1.p	b-.0	op-
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMtSe (AeFVOW)	poN0b6p169	0.0N	µg/t	<0.0N	0.b1N µg/t	opj	b9.0	o7o
mP1poX: U6mG i l herLluf rf f BGave sullf vaMtSe (mCFVOW)	7oNo6N061	0.0N	µg/t	<0.0N	0.b1N µg/t	o1j	- 0.0	op0
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMtSf eG avf l (AeFVOm)	1777960j 6-	0.0N	µg/t	<0.0N	0.b1N µg/t	o09	- 0.0	op0
mP1poX: U6mG i l herLluf rf f BGave sullf vaMtSf eG avf l (mCFVOm)	obj o6j j 61	0.0N	µg/t	<0.0N	0.b1N µg/t	j 9.-	- 0.0	op0
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMtSf aBeCtBaBtS (AeFVOWW)	1pNN6poGj	0.01	µg/t	<0.01	0.1N µg/t	op0	bN.0	opb
mP1poX: U6mG i l herLluf rf f BGave sullf vaMtSf aBeCtBaBtS (mCFVOWW)	1j j o6NO6o	0.01	µg/t	<0.01	0.1N µg/t	oop	bo.0	opN
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4038409)								
mP1poX: PerLluf rf f BGave sullf vaMtSe (FVOW)	-N76j o6o	0.01	µg/t	<0.01	0.1N µg/t	j b.-	b-.0	op-
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMtSe (AeFVOW)	poN0b6p169	0.0N	µg/t	<0.0N	0.b1N µg/t	oob	b9.0	o7o
mP1poX: U6mG i l herLluf rf f BGave sullf vaMtSe (mCFVOW)	7oNo6N061	0.0N	µg/t	<0.0N	0.b1N µg/t	j j .N	- 0.0	op0

Ouy6A aGEx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4038409) - continued								
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMESf eGavf l (A eFVOm)	1777960j 6-	0.0N	µg/t	<0.0N	0.b1N µg/t	o0-	- 0.0	op0
mP1poX: U6mG i l herLluf rf f BGave sullf vaMESf eGavf l (mGFVOm)	obj o6j j 61	0.0N	µg/t	<0.0N	0.b1N µg/t	j j .b	- 0.0	op0
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMESf aBeGBaBES (A eFVOWW)	1pNN6poGj	0.01	µg/t	<0.01	0.1N µg/t	o17	bN.0	opb
mP1poX: U6mG i l herLluf rf f BGave sullf vaMESf aBeGBaBES (mGFVOWW)	1j j o6N06o	0.01	µg/t	<0.01	0.1N µg/t	o10	bo.0	opN
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4038443)								
mP1poX: PerLluf rf f BGave sullf vaMESe (FVOW)	- N76j o6o	0.01	µg/t	<0.01	0.1N µg/t	j o.o	b- .0	op-
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMESe (A eFVOW)	poN0b6p169	0.0N	µg/t	<0.0N	0.b1N µg/t	ooj	b9.0	o7o
mP1poX: U6mG i l herLluf rf f BGave sullf vaMESe (mGFVOW)	7oNo6N061	0.0N	µg/t	<0.0N	0.b1N µg/t	j j .9	- 0.0	op0
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMESf eGavf l (A eFVOm)	1777960j 6-	0.0N	µg/t	<0.0N	0.b1N µg/t	j 9.9	- 0.0	op0
mP1poX: U6mG i l herLluf rf f BGave sullf vaMESf eGavf l (mGFVOm)	obj o6j j 61	0.0N	µg/t	<0.0N	0.b1N µg/t	j o.9	- 0.0	op0
mP1poX: U6A eG i l herLluf rf f BGave sullf vaMESf aBeGBaBES (A eFVOWW)	1pNN6poGj	0.01	µg/t	<0.01	0.1N µg/t	oo0	bN.0	opb
mP1poX: U6mG i l herLluf rf f BGave sullf vaMESf aBeGBaBES (mGFVOWW)	1j j o6N06o	0.01	µg/t	<0.01	0.1N µg/t	o0p	bo.0	opN
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4035614)								
mP1poX: 7:1 Fluf rf GElf Mer sullf vBaBES (7:1 FTO)	- N- o176- 167	0.0N	µg/t	<0.0N	0.1p7 µg/t	j b.p	bp.0	o7p
mP1poX: b:1 Fluf rf GElf Mer sullf vBaBES (b:1 FTO)	1- boj 6j - 61	0.0N	µg/t	<0.0N	0.1p9 µg/t	j N.N	b7.0	o70
mP1poX: 9:1 Fluf rf GElf Mer sullf vBaBES (9:1 FTO)	pj o096p767	0.0N	µg/t	<0.0N	0.17 µg/t	o07	b- .0	op9
mP1poX: o0:1 Fluf rf GElf Mer sullf vBaBES (o0:1 FTO)	o1011b6b060	0.0N	µg/t	<0.0N	0.171 µg/t	o11	- 0.0	op0
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4038409)								
mP1poX: 7:1 Fluf rf GElf Mer sullf vBaBES (7:1 FTO)	- N- o176- 167	0.0N	µg/t	<0.0N	0.1p7 µg/t	o00	bp.0	o7p
mP1poX: b:1 Fluf rf GElf Mer sullf vBaBES (b:1 FTO)	1- boj 6j - 61	0.0N	µg/t	<0.0N	0.1p9 µg/t	j p.0	b7.0	o70
mP1poX: 9:1 Fluf rf GElf Mer sullf vBaBES (9:1 FTO)	pj o096p767	0.0N	µg/t	<0.0N	0.17 µg/t	o0-	b- .0	op9
mP1poX: o0:1 Fluf rf GElf Mer sullf vBaBES (o0:1 FTO)	o1011b6b060	0.0N	µg/t	<0.0N	0.171 µg/t	o1N	- 0.0	op0
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4038443)								
mP1poX: 7:1 Fluf rf GElf Mer sullf vBaBES (7:1 FTO)	- N- o176- 167	0.0N	µg/t	<0.0N	0.1p7 µg/t	o0o	bp.0	o7p
mP1poX: b:1 Fluf rf GElf Mer sullf vBaBES (b:1 FTO)	1- boj 6j - 61	0.0N	µg/t	<0.0N	0.1p9 µg/t	j 9.1	b7.0	o70
mP1poX: 9:1 Fluf rf GElf Mer sullf vBaBES (9:1 FTO)	pj o096p767	0.0N	µg/t	<0.0N	0.17 µg/t	j N.7	b- .0	op9
mP1poX: o0:1 Fluf rf GElf Mer sullf vBaBES (o0:1 FTO)	o1011b6b060	0.0N	µg/t	<0.0N	0.171 µg/t	j 1.0	- 0.0	op0
EP231P: PFAS Sums (QCLot: 4035614)								
mP1poX: OuM f LPFWO	6666	0.0o	µg/t	<0.0o	6666	6666	6666	6666
mP1poX: OuM f LPFk xO avS PFVO	pNN67b67/o- bp61p6o	0.0o	µg/t	<0.0o	6666	6666	6666	6666

Ouy6A aCEx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231P: PFAS Sums (QCLot: 4035614) - continued								
mP1poX: OuM f LPFWO (I Wc m t tEsC)	6666	0.0o	µg/t	<0.0o	6666	6666	6666	6666
EP231P: PFAS Sums (QCLot: 4038409)								
mP1poX: OuM f LPFWO	6666	0.0o	µg/t	<0.0o	6666	6666	6666	6666
mP1poX: OuM f LPFk xO avS PFVO	pNN67b67/o-bp61p6o	0.0o	µg/t	<0.0o	6666	6666	6666	6666
mP1poX: OuM f LPFWO (I Wc m t tEsC)	6666	0.0o	µg/t	<0.0o	6666	6666	6666	6666
EP231P: PFAS Sums (QCLot: 4038443)								
mP1poX: OuM f LPFWO	6666	0.0o	µg/t	<0.0o	6666	6666	6666	6666
mP1poX: OuM f LPFk xO avS PFVO	pNN67b67/o-bp61p6o	0.0o	µg/t	<0.0o	6666	6666	6666	6666
mP1poX: OuM f LPFWO (I Wc m t tEsC)	6666	0.0o	µg/t	<0.0o	6666	6666	6666	6666

Matrix Spike (MS) Report

T-e qualEC BfvCf I GerM AaCEx OhE5e (AO) reLers C av EvCalayfraCri shlEC saMhle shE5eS wEC a rehresevGaCEDe seC f L GargeC avali Ges. T-e hurhf se f L GEs Qn haraMeGr Es C Mf vECr hf GevCEal MaCEx eLLeBGs f v avali Ge reBf DerEes. OGaCEBI eBf Deri t EMEGs as her layf raCri c aGa QualEC Vy_eBCEDes (c QVs). HSeal reBf Deri ravges sGaGeS Mai ye waEDeS Ev Ge eDevCf LsaMhle MaCEx EvGerLerevBe.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2122998**	Page	: 1 of 9
Amendment	: **1**		
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 18-Nov-2021
Site	: Base	Issue Date	: 14-Jan-2022
Sampler	: [redacted]	No. of samples received	: 57
Order number	: -	No. of samples analysed	: 54

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	54	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	54	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445_SW336_211115,	0445_QC503_211115	**15-Nov-2021**	**26-Nov-2021**	14-May-2022	✓	**26-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X)								
0445_MW009_211116,	0445_MW016_211116,	**16-Nov-2021**	**25-Nov-2021**	15-May-2022	✓	**25-Nov-2021**	15-May-2022	✓
0445_MW018_211116,	0445_MW020_211116,							
0445_MW034_211116,	0445_MW035_211116,							
0445_MW043_211116,	0445_MW046_D_211116,							
0445_MW046_I_211116,	0445_MW052_211116,							
0445_MW346_211117								
HDPE (no PTFE) (EP231X)								
0445_MW351_211116,	0445_MW352_211116,	**16-Nov-2021**	**26-Nov-2021**	15-May-2022	✓	**26-Nov-2021**	15-May-2022	✓
0445_MW354_211116,	0445_SW349_211115,							
0445_SW379_21116,	0445_SW387_211116,							
0445_SW388_211116,	0445_SW448_211115,							
0445_QC106_211115,	0445_QC107_211117,							
0445_QC108_211115,	0445_QC109_211116,							
0445_QC311_211116,	0445_QC504_211116							
HDPE (no PTFE) (EP231X)								
0445_MW311_211117,	0445_MW315_211117,	**17-Nov-2021**	**25-Nov-2021**	16-May-2022	✓	**25-Nov-2021**	16-May-2022	✓
0445_MW345_211117								
HDPE (no PTFE) (EP231X)								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids - Continued							
0445_SW307_211117, 0445_SW310_211117, 0445_SW311_211117, 0445_SW313_211117, 0445_SW316_211117, 0445_SW321_211117, 0445_SW322_211117, 0445_SW323_211117, 0445_SW324_211117, 0445_SW326_211117, 0445_SW332_211117, 0445_SW333_211117, 0445_SW346_211117, 0445_SW355_211117, 0445_SW370_211117, 0445_SW374_211117, 0445_SW375_211117, 0445_SW382_211116, 0445_QC110_211117, 0445_QC112_211117, 0445_QC111_211117, 0445_QC310_211115, 0445_QC314_211117, 0445_SW404_211117	**17-Nov-2021**	**26-Nov-2021**	16-May-2022	✓	**26-Nov-2021**	16-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0445_SW336_211115, 0445_QC503_211115	**15-Nov-2021**	**26-Nov-2021**	14-May-2022	✓	**26-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW009_211116, 0445_MW016_211116, 0445_MW018_211116, 0445_MW020_211116, 0445_MW034_211116, 0445_MW035_211116, 0445_MW043_211116, 0445_MW046_D_211116, 0445_MW046_I_211116, 0445_MW052_211116, 0445_MW346_211117	**16-Nov-2021**	**25-Nov-2021**	15-May-2022	✓	**25-Nov-2021**	15-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW351_211116, 0445_MW352_211116, 0445_MW354_211116, 0445_SW349_211115, 0445_SW379_21116, 0445_SW387_211116, 0445_SW388_211116, 0445_SW448_211115, 0445_QC106_211115, 0445_QC107_211117, 0445_QC108_211115, 0445_QC109_211116, 0445_QC311_211116, 0445_QC504_211116	**16-Nov-2021**	**26-Nov-2021**	15-May-2022	✓	**26-Nov-2021**	15-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW311_211117, 0445_MW315_211117, 0445_MW345_211117	**17-Nov-2021**	**25-Nov-2021**	16-May-2022	✓	**25-Nov-2021**	16-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_SW307_211117, 0445_SW310_211117, 0445_SW311_211117, 0445_SW313_211117, 0445_SW316_211117, 0445_SW321_211117, 0445_SW322_211117, 0445_SW323_211117, 0445_SW324_211117, 0445_SW326_211117, 0445_SW332_211117, 0445_SW333_211117, 0445_SW346_211117, 0445_SW355_211117, 0445_SW370_211117, 0445_SW374_211117, 0445_SW375_211117, 0445_SW382_211116, 0445_QC110_211117, 0445_QC112_211117, 0445_QC111_211117, 0445_QC310_211115, 0445_QC314_211117, 0445_SW404_211117	**17-Nov-2021**	**26-Nov-2021**	16-May-2022	✓	**26-Nov-2021**	16-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0445_SW336_211115, 0445_QC503_211115	**15-Nov-2021**	**26-Nov-2021**	14-May-2022	✓	**26-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW009_211116, 0445_MW016_211116, 0445_MW018_211116, 0445_MW020_211116, 0445_MW034_211116, 0445_MW035_211116, 0445_MW043_211116, 0445_MW046_D_211116, 0445_MW046_I_211116, 0445_MW052_211116, 0445_MW346_211117	**16-Nov-2021**	**25-Nov-2021**	15-May-2022	✓	**25-Nov-2021**	15-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW351_211116, 0445_MW352_211116, 0445_MW354_211116, 0445_SW349_211115, 0445_SW379_21116, 0445_SW387_211116, 0445_SW388_211116, 0445_SW448_211115, 0445_QC106_211115, 0445_QC107_211117, 0445_QC108_211115, 0445_QC109_211116, 0445_QC311_211116, 0445_QC504_211116	**16-Nov-2021**	**26-Nov-2021**	15-May-2022	✓	**26-Nov-2021**	15-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW311_211117, 0445_MW315_211117, 0445_MW345_211117	**17-Nov-2021**	**25-Nov-2021**	16-May-2022	✓	**25-Nov-2021**	16-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_SW307_211117, 0445_SW310_211117, 0445_SW311_211117, 0445_SW313_211117, 0445_SW316_211117, 0445_SW321_211117, 0445_SW322_211117, 0445_SW323_211117, 0445_SW324_211117, 0445_SW326_211117, 0445_SW332_211117, 0445_SW333_211117, 0445_SW346_211117, 0445_SW355_211117, 0445_SW370_211117, 0445_SW374_211117, 0445_SW375_211117, 0445_SW382_211116, 0445_QC110_211117, 0445_QC112_211117, 0445_QC111_211117, 0445_QC310_211115, 0445_QC314_211117, 0445_SW404_211117	**17-Nov-2021**	**26-Nov-2021**	16-May-2022	✓	**26-Nov-2021**	16-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_SW336_211115, 0445_QC503_211115	**15-Nov-2021**	**26-Nov-2021**	14-May-2022	✓	**26-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW009_211116, 0445_MW016_211116, 0445_MW018_211116, 0445_MW020_211116, 0445_MW034_211116, 0445_MW035_211116, 0445_MW043_211116, 0445_MW046_D_211116, 0445_MW046_I_211116, 0445_MW052_211116, 0445_MW346_211117	**16-Nov-2021**	**25-Nov-2021**	15-May-2022	✓	**25-Nov-2021**	15-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW351_211116, 0445_MW352_211116, 0445_MW354_211116, 0445_SW349_211115, 0445_SW379_21116, 0445_SW387_211116, 0445_SW388_211116, 0445_SW448_211115, 0445_QC106_211115, 0445_QC107_211117, 0445_QC108_211115, 0445_QC109_211116, 0445_QC311_211116, 0445_QC504_211116	**16-Nov-2021**	**26-Nov-2021**	15-May-2022	✓	**26-Nov-2021**	15-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW311_211117, 0445_MW315_211117, 0445_MW345_211117	**17-Nov-2021**	**25-Nov-2021**	16-May-2022	✓	**25-Nov-2021**	16-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_SW307_211117, 0445_SW310_211117, 0445_SW311_211117, 0445_SW313_211117, 0445_SW316_211117, 0445_SW321_211117, 0445_SW322_211117, 0445_SW323_211117, 0445_SW324_211117, 0445_SW326_211117, 0445_SW332_211117, 0445_SW333_211117, 0445_SW346_211117, 0445_SW355_211117, 0445_SW370_211117, 0445_SW374_211117, 0445_SW375_211117, 0445_SW382_211116, 0445_QC110_211117, 0445_QC112_211117, 0445_QC111_211117, 0445_QC310_211115, 0445_QC314_211117, 0445_SW404_211117	**17-Nov-2021**	**26-Nov-2021**	16-May-2022	✓	**26-Nov-2021**	16-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_SW336_211115, 0445_QC503_211115	**15-Nov-2021**	**26-Nov-2021**	14-May-2022	✓	**26-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW009_211116, 0445_MW016_211116, 0445_MW018_211116, 0445_MW020_211116, 0445_MW034_211116, 0445_MW035_211116, 0445_MW043_211116, 0445_MW046_D_211116, 0445_MW046_I_211116, 0445_MW052_211116, 0445_MW346_211117	**16-Nov-2021**	**25-Nov-2021**	15-May-2022	✓	**25-Nov-2021**	15-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW351_211116, 0445_MW352_211116, 0445_MW354_211116, 0445_SW349_211115, 0445_SW379_21116, 0445_SW387_211116, 0445_SW388_211116, 0445_SW448_211115, 0445_QC106_211115, 0445_QC107_211117, 0445_QC108_211115, 0445_QC109_211116, 0445_QC311_211116, 0445_QC504_211116	**16-Nov-2021**	**26-Nov-2021**	15-May-2022	✓	**26-Nov-2021**	15-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_MW311_211117, 0445_MW315_211117, 0445_MW345_211117	**17-Nov-2021**	**25-Nov-2021**	16-May-2022	✓	**25-Nov-2021**	16-May-2022	✓
HDPE (no PTFE) (EP231X)							
0445_SW307_211117, 0445_SW310_211117, 0445_SW311_211117, 0445_SW313_211117, 0445_SW316_211117, 0445_SW321_211117, 0445_SW322_211117, 0445_SW323_211117, 0445_SW324_211117, 0445_SW326_211117, 0445_SW332_211117, 0445_SW333_211117, 0445_SW346_211117, 0445_SW355_211117, 0445_SW370_211117, 0445_SW374_211117, 0445_SW375_211117, 0445_SW382_211116, 0445_QC110_211117, 0445_QC112_211117, 0445_QC111_211117, 0445_QC310_211115, 0445_QC314_211117, 0445_SW404_211117	**17-Nov-2021**	**26-Nov-2021**	16-May-2022	✓	**26-Nov-2021**	16-May-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	54	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	54	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	54	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	54	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2122999**	Page	: 1 of 9
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 18-Nov-2021 16:25
Order number	: -	Date Analysis Commenced	: 22-Nov-2021
C-O-C number	: 30113	Issue Date	: 24-Nov-2021 14:06
Sampler	: [redacted]		
Site	: Public Lands		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_SW432_211116	0445_SW434_211115	----	----	----
			Sampling date / time	16-Nov-2021 07:51	15-Nov-2021 08:03	----	----	----
Compound	CAS Number	LOR	Unit	EM2122999-009	EM2122999-010	-------	-------	-------
				Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.03**	**0.02**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.05**	**0.05**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_SW432_211116	0445_SW434_211115	----	----	----
				Sampling date / time	16-Nov-2021 07:51	15-Nov-2021 08:03	----	----	----
Compound	CAS Number	LOR	Unit		EM2122999-009	EM2122999-010	-------	-------	-------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.08**	**0.07**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.08**	**0.07**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.08**	**0.07**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**87.7**	**86.6**	----	----	----
13C8-PFOA	----	0.02	%		**101**	**101**	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW393_211116	0445_SW395_211116	0445_SW398_211116	0445_SW424_211115	0445_SW427_211115
			Sampling date / time	16-Nov-2021 15:14	16-Nov-2021 09:54	16-Nov-2021 09:52	16-Nov-2021 08:05	15-Nov-2021 08:11
Compound	CAS Number	LOR	Unit	EM2122999-001	EM2122999-002	EM2122999-003	EM2122999-005	EM2122999-006
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.03**	<0.02	**0.04**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	**0.02**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	**0.10**	<0.01	**0.40**	**0.06**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	**0.02**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	**0.09**	<0.01	**0.76**	**0.19**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	**0.03**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	**0.06**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	**0.03**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW393_211116	0445_SW395_211116	0445_SW398_211116	0445_SW424_211115	0445_SW427_211115
				Sampling date / time	16-Nov-2021 15:14	16-Nov-2021 09:54	16-Nov-2021 09:52	16-Nov-2021 08:05	15-Nov-2021 08:11
Compound	CAS Number	LOR	Unit		EM2122999-001	EM2122999-002	EM2122999-003	EM2122999-005	EM2122999-006
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.22**	<0.01	**1.36**	**0.25**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.19**	<0.01	**1.16**	**0.25**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.22**	<0.01	**1.32**	**0.25**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**91.2**	**98.1**	**83.3**	**95.6**	**97.8**
13C8-PFOA	----	0.02	%		**98.4**	**99.3**	**94.6**	**98.3**	**97.3**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW430_211115	0445_SW431_211116	0445_SW463_211115	0445_SW470_211116	----
			Sampling date / time	16-Nov-2021 08:07	16-Nov-2021 07:50	16-Nov-2021 08:09	16-Nov-2021 09:53	----
Compound	CAS Number	LOR	Unit	EM2122999-007	EM2122999-008	EM2122999-011	EM2122999-012	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	**0.05**	**0.02**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	**0.03**	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.06**	**0.03**	**0.74**	**0.07**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	**0.04**	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.10**	**0.07**	**1.36**	**0.06**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**0.02**	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	**0.07**	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**0.04**	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW430_211115	0445_SW431_211116	0445_SW463_211115	0445_SW470_211116	----
				Sampling date / time	16-Nov-2021 08:07	16-Nov-2021 07:50	16-Nov-2021 08:09	16-Nov-2021 09:53	----
Compound	CAS Number	LOR	Unit		EM2122999-007	EM2122999-008	EM2122999-011	EM2122999-012	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.16**	**0.10**	**2.35**	**0.15**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.16**	**0.10**	**2.10**	**0.13**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.16**	**0.10**	**2.28**	**0.15**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**85.5**	**91.2**	**92.0**	**97.6**	----
13C8-PFOA	----	0.02	%		**106**	**97.1**	**103**	**98.4**	----

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2122555**		
Client	: **CAR9 NO DICTORIA PTV LT9**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: VIC_0445_PFASOMP	Page	: 1 of 2
Order number	: -	Quote number	: EM2021LANECON0009 (SY/139/19_Bandiana)
C-O-C number	: 30113	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Public Lands		
Sampler	: [redacted]		

Dates

Date Samples Received	: 18-Nov-2021 16:25	Issue Date	: 20-Nov-2021
Client Requested Due Date	: 25-Nov-2021	Scheduled Reporting Date	: **25-Nov-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 3.2°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 12 / 12

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2122999-001	16-Nov-2021 15:14	0445_SW393_211116	✓
EM2122999-002	16-Nov-2021 09:54	0445_SW395_211116	✓
EM2122999-003	16-Nov-2021 09:52	0445_SW398_211116	✓
EM2122999-004	18-Nov-2021 09:54	0445_SW404_211117	✓
EM2122999-005	16-Nov-2021 08:05	0445_SW424_211115	✓
EM2122999-006	15-Nov-2021 08:11	0445_SW427_211115	✓
EM2122999-007	16-Nov-2021 08:07	0445_SW430_211115	✓
EM2122999-008	16-Nov-2021 07:50	0445_SW431_211116	✓
EM2122999-009	16-Nov-2021 07:51	0445_SW432_211116	✓
EM2122999-010	15-Nov-2021 08:03	0445_SW434_211115	✓
EM2122999-011	16-Nov-2021 08:09	0445_SW463_211115	✓
EM2122999-012	16-Nov-2021 09:53	0445_SW470_211116	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

ALL INDOICES

- A4 - AU Tax Invoice (INV) Email

9 ERP LAB REPORTS

- EDI Format - ESDAT (ESDAT) Email

[redacted]

CHAIN OF CUSTODY

ALS COC#: 30113 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Lands

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 18/11/21, 1625

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

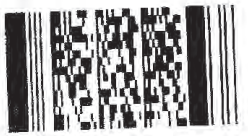
Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_SW393_211116		16/11/2021 03:14 PM	Water	ALS: 2 Non ALS: 0	No	X		
002	0445_SW395_211116		16/11/2021 09:54 AM	Water	ALS: 2 Non ALS: 0	No	X		
003	0445_SW398_211116		16/11/2021 09:52 AM	Water	ALS: 2 Non ALS: 0	No	X		
004	0445_SW404_211117		18/11/2021 09:54 AM	Water	ALS: 0 Non ALS: 0	No	X		
005	0445_SW424_211115		16/11/2021 08:05 AM	Water	ALS: 2 Non ALS: 0	No	X		
006	0445_SW427_211115		15/11/2021 08:11 AM	Water	ALS: 2 Non ALS: 0	No	X		
007	0445_SW430_211115		16/11/2021 08:07 AM	Water	ALS: 2 Non ALS: 0	No	X		
008	0445_SW431_211116		16/11/2021 07:50 AM	Water	ALS: 2 Non ALS: 0	No	X		
009	0445_SW432_211116		16/11/2021 07:51 AM	Water	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2122999



Telephone : +61-3-8549 9600

SCANNED

Received: 18/11, 16:25 Carrier:

Temp: 12.5 °C

CHAIN OF CUSTODY

COC#: 30113 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Lands

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_SW434_211115		15/11/2021 08:03 AM	Water	ALS: 2 Non ALS: 0	No	X		
011	0445_SW463_211115		16/11/2021 08:09 AM	Water	ALS: 2 Non ALS: 0	No	X		
012	0445_SW470_211116		16/11/2021 09:53 AM	Water	ALS: 2 Non ALS: 0	No	X		

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2122999**	Page	: 1 of L
i lreEy	: **CARDNO VICTORIA PTY LTD**	bat orayorC	: v EmroED eEyal MmmsroE c elt ourEe
i oEyaAy	: [redacted]	i oEyaAy	: [redacted]
B55ress	: [redacted]	B55ress	: [redacted]
Tele7hoEe	: ----	Tele7hoEe	: [redacted]
ProjeAy	: , Ii _0ppS_PFBNUc P	Maye NaD7les l eAeme5	: 18-Oom2021
Ur5er EuDt er	: -	Maye BEalCsms i oDDeEAe5	: 22-Oom2021
i -U-i EuDt er	: 40114	Issue Maye	: 2p-Oom2021
NaD7ler	: [redacted]		
Nnye	: Put InAbaE5s		
Quoye EuDt er	: NY/149/19_WaE5maEa		
Oo. of saD7les reAeme5	: 11		
Oo. of saD7les aEalCse5	: 11		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

Thms re7ory su7erse5es aEC 7remmous re7ory(s) wnyh yhms refereEAe. l esulys a77lC yo yhe saD7le(s) as sut Dnye53 uEless yhe saD7lnEg was AoE5uAye5 t C BbN. Thms 5oAuDeEy shall Eoyt e re7ro5uAe53exAe7ynE full.

Thms QualnyCi oEyrol l e7ory AoEyanEs yhe followmEg nEforD aymoE:

- bat orayorCMu7lnAaye (MVP) l e7ory; l elaymne PerAeEyage MnfereEAe (l PM) aE5 BAAe7yaEAe bnDms
- c eyho5 WaEd (c W) aE5 bat orayorCi oEyrol N7mde (bi N) l e7ory; l eAomerCaE5 BAAe7yaEAe bnDms
- c aymx N7mde (c N) l e7ory; l eAomerCaE5 BAAe7yaEAe bnDms

Signatories

Thms 5oAuDeEy has t eeE eleAyroEnAallCsmgEe5 t Cyhe auyhomze5 smgEayormes t elow. v leAyroEnA smgEnEg ms Aarme5 ouynE AoD7lmaEAe wnyh 7roAe5ures s7eAme5 nE 21 i Fl Pary 11.

Signatories	*Position*	*Accreditation Category*
XnEg bnE	NeEror UrgaEnAi heDnsy	c elt ourEe UrgaEnAs3N7mEgmale3, Ii

General Comments

The aEalOyrAal 7roAe5ures use5 t C BbN hame t eeE 5emelo7e5 froD esyat lnshe5 nEyerEayroEallC reAogEnse5 7roAe5ures suAh as yhose 7ut lnshe5 t C yhe VNv PB3 BPHB3 BN aE5 Ov Pc . IE house 5emelo7e5 7roAe5ures are fullCmaln5aye5 aE5 are ofyeE ayyhe AlneEyrequesy.

R here Dorsyure 5eyerDrnEayroE has t eeE 7erforDe53resulys are re7orye5 oE a 5rCwerghyt asrs.

R here a re7orye5 less yhaE (<) resuly rs hrgher yhaE yhe bUI 3 yhrs DaC t e 5ue yo 7rnDarC saD7le exyraAy/5rgesyaye 5rluyroE aE5/or nEsuffrAneEy saD7le for aEalOsrs. R here yhe bUI of a re7orye5 resuly 5rffers froD syaE5ar5 bUI 3yhrs DaCt e 5ue yo hrgh Dorsyure AoEyeEy3rEsuffrAneEysaD7le (re5uAe5 werghyeD7loCe5) or Dayrx nEyerfereEAe.

KeC: BEoECDous = I efers yo saD7les whrAh are Eoys7eArfrAallC7aryof yhrs word or5er t uyforDe5 7aryof yhe Qi 7roAess loy
i BN OuDt er = i BN regrsyrCEuDt er froD 5ayat ase DarEyarEe5 t Ci heDrAal Bt syraAys NermAes. The i heDrAal Bt syraAys NermAe rs a 5rmsrroE of yhe BDermAaE i heDrAal NoAreyC.
bUI = brnDryof re7oryrEg
I PM = I elayrne PerAeEyage MrffereEAe
= IE5rAayes farle5 Qi

Laboratory Duplicate (DUP) Report

The qualnyC AoEyrol yerD bat orayorC Mu7lrAaye refers yo a raE5oDIC seleAye5 nEyralat orayorC s7lry. bat orayorC 5u7lrAayes 7rom5e nEforDayroE regar5rEg Deyho5 7reArsroE aE5 saD7le heyerogeEenyC. The 7erDnye5 raEges for yhe I elayrne PerAeEy Memrayr oE (I PM) of bat orayorC Mu7lrAayes are s7eArfre5 rE BbN c eyho5 QR I -v O/48 aE5 are 5e7eE5eEy oE yhe DagEnu5e of resulys rE AoD7arrsoE yo yhe lemel of re7oryEg: I esuly < 10 yrDes bUI : Oo brnDry, I esulyt eyweeE 10 aE5 20 yrDes bUI : 0% - S0%; I esuly> 20 yrDes bUI : 0% - 20%.

Nut -c ayrx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: PerfluorohexaEe sulfoErAaAr5 (PFHxN)	4SS-p6-p	0.01	µg/b	1.0L	1.00	6.S	0% - 20%
		v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1L64-24-1	0.01	µg/b	0.pp	0.p8	8.6	0% - 20%
		v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4LS-L4-S	0.02	µg/b	0.16	0.1S	0.0	Oo brnDry
		v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2L06-91-p	0.02	µg/b	0.11	0.10	0.0	Oo brnDry
		v P241X: Perfluorohe7yaEe sulfoErAaAr5 (PFH7N)	4LS-92-8	0.02	µg/b	0.04	0.0p	0.0	Oo brnDry
		v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-LL-4	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
v c 2122968-006	BEoECDous	v P241X: PerfluorohexaEe sulfoErAaAr5 (PFHxN)	4SS-p6-p	0.01	µg/b	4.4L	4.S6	S.6	0% - 20%
		v P241X: PerfluorooAyaEe sulfoErAaAr5 (PFUN)	1L64-24-1	0.01	µg/b	4.pS	p.10	1L.p	0% - 20%
		v P241X: Perfluorot uyaEe sulfoErAaAr5 (PFWN)	4LS-L4-S	0.02	µg/b	0.60	0.66	9.6	0% - 20%
		v P241X: Perfluoro7eEyaEe sulfoErAaAr5 (PFPeN)	2L06-91-p	0.02	µg/b	0.SL	0.S9	2.S	0% - 20%
		v P241X: Perfluorohe7yaEe sulfoErAaAr5 (PFH7N)	4LS-92-8	0.02	µg/b	0.2L	0.44	19.0	0% - S0%
		v P241X: Perfluoro5eAaEe sulfoErAaAr5 (PFMN)	44S-LL-4	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: PerfluorooAyaEorAaAr5 (PFUB)	44S-6L-1	0.01	µg/b	0.0p	0.0p	0.0	Oo brnDry
		v P241X: Perfluoro7eEyaEorAaAr5 (PFPeB)	2L06-90-4	0.02	µg/b	0.0p	0.0p	0.0	Oo brnDry
		v P241X: PerfluorohexaEorAaAr5 (PFHxB)	40L-2p-p	0.02	µg/b	0.14	0.12	0.0	Oo brnDry
		v P241X: Perfluorohe7yaEorAaAr5 (PFH7B)	4LS-8S-9	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: PerfluoroEoEaEorAaAr5 (PFOB)	4LS-9S-1	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5eAaEorAaAr5 (PFMB)	44S-L6-2	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: PerfluorouE5eAaEorAaAr5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoro5o5eAaEorAaAr5 (PFMoMB)	40L-SS-1	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoroyr5eAaEorAaAr5 (PFTrMB)	L2629-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo brnDry
		v P241X: Perfluoroyeyra5eAaEorAaAr5 (PFTeMB)	4L6-06-L	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo brnDry
		v P241X: Perfluorot uyaEorAaAr5 (PFWB)	4LS-22-p	0.1	µg/b	<0.1	<0.1	0.0	Oo brnDry

Nut -c ayrx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4028919) - continued									
v c 2122968-006	BEoECDous	v P241X: PerfluorooAyaEomAaAr5 (PFUB)	44S-6L-1	0.01	µg/b	0.40	0.42	4.L	0% - 20%
		v P241X: Perfluoro7eEyaEomAaAr5 (PFPeB)	2L06-90-4	0.02	µg/b	0.21	0.24	8.9	0% - S0%
		v P241X: PerfluorohexaEomAaAr5 (PFHxB)	40L-2p-p	0.02	µg/b	0.69	0.L6	10.p	0% - 20%
		v P241X: Perfluorohe7yaEomAaAr5 (PFH7B)	4LS-8S-9	0.02	µg/b	0.18	0.20	S.S	Oo bnDry
		v P241X: PerfluoroEoEaEomAaAr5 (PFOB)	4LS-9S-1	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: Perfluoro5eAaEomAaAr5 (PFMB)	44S-L6-2	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: PerfluorouE5eAaEomAaAr5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: Perfluoro5o5eAaEomAaAr5 (PFMoMB)	40L-SS-1	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: Perfluoroyr5eAaEomAaAr5 (PFTrMB)	L2629-9p-8	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: Perfluoroyeyra5eAaEomAaAr5 (PFTeMB)	4L6-06-L	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: Perfluorot uyaEomAaAr5 (PFWB)	4LS-22-p	0.1	µg/b	0.2	0.2	0.0	Oo bnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	LSp-91-6	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oaAeymAaAr5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oaAeymAaAr5 (v yFUNBB)	2991-S0-6	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S06-42-8	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (c eFUNv)	2ppp8-09-L	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (v yFUNv)	1691-99-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
v c 2122968-006	BEoECDous	v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	LSp-91-6	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oaAeymAaAr5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oaAeymAaAr5 (v yFUNBB)	2991-S0-6	0.02	µg/b	<0.02	<0.02	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S06-42-8	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (c eFUNv)	2ppp8-09-L	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (v yFUNv)	1691-99-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: p:2 FluoroyeloDer sulfoEmAaAr5 (p:2 FTN)	LSL12p-L2-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4028919) - continued									
v c 2122968-001	BEoECDous	v P241X: 6:2 FluoroyeloDer sulfoEnAaAr5 (6:2 FTN)	2L619-9L-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: 8:2 FluoroyeloDer sulfoEnAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: 10:2 FluoroyeloDer sulfoEnAaAr5 (10:2 FTN)	120226-60-0	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
v c 2122968-006	BEoECDous	v P241X: p:2 FluoroyeloDer sulfoEnAaAr5 (p:2 FTN)	LSL12p-L2-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: 6:2 FluoroyeloDer sulfoEnAaAr5 (6:2 FTN)	2L619-9L-2	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: 8:2 FluoroyeloDer sulfoEnAaAr5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
		v P241X: 10:2 FluoroyeloDer sulfoEnAaAr5 (10:2 FTN)	120226-60-0	0.0S	µg/b	<0.0S	<0.0S	0.0	Oo bnDry
EP231P: PFAS Sums (QC Lot: 4028919)									
v c 2122968-001	BEoECDous	v P241X: NuD of PFBN	----	0.01	µg/b	2.02	1.9L	2.S	0% - 20%
		v P241X: NuD of PFHxNaE5 PFUN	4SS-p6-p/1L64-24-1	0.01	µg/b	1.S1	1.p8	2.0	0% - 20%
		v P241X: NuD of PFBN (R B MvI brsv)	----	0.01	µg/b	1.88	1.84	2.L	0% - 20%
v c 2122968-006	BEoECDous	v P241X: NuD of PFBN	----	0.01	µg/b	9.8p	11.0	10.L	0% - 20%
		v P241X: NuD of PFHxNaE5 PFUN	4SS-p6-p/1L64-24-1	0.01	µg/b	6.82	L.66	11.6	0% - 20%
		v P241X: NuD of PFBN (R B MvI brsv)	----	0.01	µg/b	9.00	10.0	10.8	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The qualnyC AoEyrol yerD c eyho5 / bat orayorC WaEd refers yo aE aEalOye free Daynx yo whnAh all reageEys are a55e5 nE yhe saDe noluDes or 7ro7orynoEs as use5 nE syaE5ar5 saD7le 7re7arayn oE. The 7ur7ose of yhns Qi 7araDeyer ns yo DoEnyor 7oyeEyal lat orayorC AoEyaDnEaynoE. The qualnyC AoEyrol yerD bat orayorC i oEyrol NaD7le (bi N) refers yo a Aeryfne5 refereEAe Dayernal3 or a dEowE nEyerfereEAe free Daynx s7nde5 wnyh yargey aEalOyes. The 7ur7ose of yhns Qi 7araDeyer ns yo DoEnyor Deyho5 7reAnsnoE aE5 aAAuraACnE5e7eE5eEyof saD7le Daynx. MCEaDnAl eAonerCbnDns are t ase5 oE syaynsynAal emaluaynoE of 7roAesse5 bi N.

Nut -c aynx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4028919)								
v P241X: Perfluorot uyaEe sulfoEnAaAn5 (PFWN)	4LS-L4-S	0.02	µg/b	<0.02	0.222 µg/b	88.4	L2.0	140
v P241X: Perfluoro7eEyaEe sulfoEnAaAn5 (PFPeN)	2L06-91-p	0.02	µg/b	<0.02	0.24S µg/b	L9.0	L1.0	12L
v P241X: PerfluorohexaEe sulfoEnAaAn5 (PFHxN)	4SS-p6-p	0.01	µg/b	<0.01	0.228 µg/b	L8.6	68.0	141
v P241X: Perfluorohe7yaEe sulfoEnAaAn5 (PFH7N)	4LS-92-8	0.02	µg/b	<0.02	0.2S µg/b	84.9	69.0	14p
v P241X: PerfluorooAyaEe sulfoEnAaAn5 (PFUN)	1L64-24-1	0.01	µg/b	<0.01	0.242 µg/b	86.6	6S.0	1p0
v P241X: Perfluoro5eAaEe sulfoEnAaAn5 (PFMN)	44S-LL-4	0.02	µg/b	<0.02	0.2p1 µg/b	81.6	S4.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4028919)								
v P241X: Perfluorot uyaEonAaAn5 (PFWB)	4LS-22-p	0.1	µg/b	<0.1	1.2S µg/b	8S.S	L4.0	129
v P241X: Perfluoro7eEyaEonAaAn5 (PFPeB)	2L06-90-4	0.02	µg/b	<0.02	0.2S µg/b	84.L	L2.0	129
v P241X: PerfluorohexaEonAaAn5 (PFHxB)	40L-2p-p	0.02	µg/b	<0.02	0.2S µg/b	LS.1	L2.0	129
v P241X: Perfluorohe7yaEonAaAn5 (PFH7B)	4LS-8S-9	0.02	µg/b	<0.02	0.2S µg/b	86.1	L2.0	140
v P241X: PerfluorooAyaEonAaAn5 (PFUB)	44S-6L-1	0.01	µg/b	<0.01	0.2S µg/b	8p.6	L1.0	144
v P241X: PerfluoroEoEaEonAaAn5 (PFOB)	4LS-9S-1	0.02	µg/b	<0.02	0.2S µg/b	8S.1	69.0	140
v P241X: Perfluoro5eAaEonAaAn5 (PFMB)	44S-L6-2	0.02	µg/b	<0.02	0.2S µg/b	82.1	L1.0	129
v P241X: PerfluorouE5eAaEonAaAn5 (PFVEMB)	20S8-9p-8	0.02	µg/b	<0.02	0.2S µg/b	9p.0	69.0	144
v P241X: Perfluoro5o5eAaEonAaAn5 (PFMoMB)	40L-SS-1	0.02	µg/b	<0.02	0.2S µg/b	82.2	L2.0	14p
v P241X: Perfluoryn5eAaEonAaAn5 (PFTrMB)	L2629-9p-8	0.02	µg/b	<0.02	0.2S µg/b	L9.L	6S.0	1pp
v P241X: Perfluoryeyra5eAaEonAaAn5 (PFTeMB)	4L6-06-L	0.0S	µg/b	<0.0S	0.94LS µg/b	8p.p	L1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4028919)								
v P241X: PerfluorooAyaEe sulfoEaDn5e (FUNB)	LSp-91-6	0.02	µg/b	<0.02	0.2S µg/b	82.0	6L.0	14L
v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5e (c eFUNB)	41S06-42-8	0.0S	µg/b	<0.0S	0.62S µg/b	10L	68.0	1p1
v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5e (v yFUNB)	p1S1-S0-2	0.0S	µg/b	<0.0S	0.62S µg/b	90.2	L0.0	140
v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5oeyhaEol (c eFUNv)	2ppp8-09-L	0.0S	µg/b	<0.0S	0.62S µg/b	89.p	L0.0	140
v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5oeyhaEol (v yFUNv)	1691-99-2	0.0S	µg/b	<0.0S	0.62S µg/b	92.8	L0.0	140
v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDn5oaAeynAaAn5 (c eFUNBB)	24SS-41-9	0.02	µg/b	<0.02	0.2S µg/b	112	6S.0	146
v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDn5oaAeynAaAn5 (v yFUNBB)	2991-S0-6	0.02	µg/b	<0.02	0.2S µg/b	116	61.0	14S
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4028919)								
v P241X: p:2 FluoroyeloDer sulfoEnAaAn5 (p:2 FTN)	LSL12p-L2-p	0.0S	µg/b	<0.0S	0.24p µg/b	80.p	64.0	1p4
v P241X: 6:2 FluoroyeloDer sulfoEnAaAn5 (6:2 FTN)	2L619-9L-2	0.0S	µg/b	<0.0S	0.248 µg/b	L0.6	6p.0	1p0
v P241X: 8:2 FluoroyeloDer sulfoEnAaAn5 (8:2 FTN)	49108-4p-p	0.0S	µg/b	<0.0S	0.2p µg/b	92.p	6L.0	148

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4028919) - continued								
v P241X: 10:2 FluoroyeloDer sulfoEnAaAn5 (10:2 FTN)	120226-60-0	0.0S	µg/b	<0.0S	0.2p2 µg/b	L4.1	L0.0	140
EP231P: PFAS Sums (QCLot: 4028919)								
v P241X: NuD of PFBN	----	0.01	µg/b	<0.01	----	----	----	----
v P241X: NuD of PFHxN aE5 PFUN	4SS-p6-p/1L 64-24-1	0.01	µg/b	<0.01	----	----	----	----
v P241X: NuD of PFBN (R B MvI brsy)	----	0.01	µg/b	<0.01	----	----	----	----

Matrix Spike (MS) Report

The qualnyC AoEyrol yerD c ayrx N7rde (c N) refers yo aE rEyralat orayorC s7lry saD7le s7rde5 wnyh a re7reseEyayme sey of yargey aEalOyes. The 7ur7ose of yhrs Qi 7araDeyer rs yo DoEnyor 7oyeEyal Dayrx effeAys oE aEalOye reAomerres. NyayAI eAomerCbrDns as 7er lat orayorCMaya QualnyCUt jeAymes (MQUs). I5eal reAomerCraEges syaye5 DaCt e warre5 rE yhe emeEyof saD7le Dayrx rEyerfereEAe.

Nut -c ayrx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4028919)							
v c 2122968-002	BEoECDous	v P241X: Perfluorot uyaEe sulfoEnAaAn5 (PFWN)	4LS-L4-S	0.222 µg/b	9S.6	L2.0	140
		v P241X: Perfluoro7eEyaEe sulfoEnAaAn5 (PFPeN)	2L06-91-p	0.24S µg/b	12p	L1.0	12L
		v P241X: PerfluorohexaEe sulfoEnAaAn5 (PFHxN)	4SS-p6-p	0.228 µg/b	# Ooy MeyerDnEe5	68.0	141
		v P241X: Perfluorohe7yaEe sulfoEnAaAn5 (PFH7N)	4LS-92-8	0.248 µg/b	LS.1	69.0	14p
		v P241X: PerfluorooAyaEe sulfoEnAaAn5 (PFUN)	1L64-24-1	0.242 µg/b	# Ooy MeyerDnEe5	6S.0	1p0
		v P241X: Perfluoro5eAaEe sulfoEnAaAn5 (PFMN)	44S-LL-4	0.2p1 µg/b	6L.p	S4.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4028919)							
v c 2122968-002	BEoECDous	v P241X: Perfluorot uyaEomAaAn5 (PFWB)	4LS-22-p	1.2S µg/b	98.1	L4.0	129
		v P241X: Perfluoro7eEyaEomAaAn5 (PFPeB)	2L06-90-4	0.2S µg/b	82.1	L2.0	129
		v P241X: PerfluorohexaEomAaAn5 (PFHxB)	40L-2p-p	0.2S µg/b	94.S	L2.0	129
		v P241X: Perfluorohe7yaEomAaAn5 (PFH7B)	4LS-8S-9	0.2S µg/b	89.L	L2.0	140
		v P241X: PerfluorooAyaEomAaAn5 (PFUB)	44S-6L-1	0.2S µg/b	80.8	L1.0	144
		v P241X: PerfluoroEoEaEomAaAn5 (PFOB)	4LS-9S-1	0.2S µg/b	91.1	69.0	140
		v P241X: Perfluoro5eAaEomAaAn5 (PFMB)	44S-L6-2	0.2S µg/b	L2.1	L1.0	129
		v P241X: PerfluorouE5eAaEomAaAn5 (PFVEMB)	20S8-9p-8	0.2S µg/b	9L.8	69.0	144
		v P241X: Perfluoro5o5eAaEomAaAn5 (PFMoMB)	40L-SS-1	0.2S µg/b	86.9	L2.0	14p
		v P241X: Perfluoroyr5eAaEomAaAn5 (PFTrMB)	L2629-9p-8	0.2S µg/b	11p	6S.0	1pp
		v P241X: Perfluoroyeyra5eAaEomAaAn5 (PFTeMB)	4L6-06-L	0.94LS µg/b	102	L1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4028919)							
v c 2122968-002	BEoECDous	v P241X: PerfluorooAyaEe sulfoEaDr5e (FUNB)	LSp-91-6	0.2S µg/b	86.p	6L.0	14L

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4028919) - continued							
v c 2122968-002	BEoECDous	v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5e (c eFUNB)	41S06-42-8	0.62S µg/b	10S	68.0	1p1
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5e (v yFUNB)	p1S1-S0-2	0.62S µg/b	102	L0.0	140
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (c eFUNv)	2ppp8-09-L	0.62S µg/b	11L	L0.0	140
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oeyhaEol (v yFUNv)	1691-99-2	0.62S µg/b	90.p	L0.0	140
		v P241X: O-c eyhCl 7erfluorooAyaEe sulfoEaDr5oaAeynA aAr5 (c eFUNBB)	24SS-41-9	0.2S µg/b	128	6S.0	146
		v P241X: O-v yhCl 7erfluorooAyaEe sulfoEaDr5oaAeynA aAr5 (v yFUNBB)	2991-S0-6	0.2S µg/b	121	61.0	14S
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4028919)							
v c 2122968-002	BEoECDous	v P241X: p:2 FluoroyeloDer sulfoEnAaAr5 (p:2 FTN)	LSL12p-L2-p	0.24p µg/b	101	64.0	1p4
		v P241X: 6:2 FluoroyeloDer sulfoEnAaAr5 (6:2 FTN)	2L619-9L-2	0.248 µg/b	9p.p	6p.0	1p0
		v P241X: 8:2 FluoroyeloDer sulfoEnAaAr5 (8:2 FTN)	49108-4p-p	0.2p µg/b	118	6L.0	148
		v P241X: 10:2 FluoroyeloDer sulfoEnAaAr5 (10:2 FTN)	120226-60-0	0.2p2 µg/b	L2.6	L0.0	140

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2122999**	Page	: 1 of 8
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0448_PFASOMP	Date Samples Received	: 15-Nov-2021
Site	: Public Lands	Issue Date	: 24-Nov-2021
Sampler	: [redacted]	No. of samples received	: 11
Order number	: -	No. of samples analysed	: 11

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the 7 uality Control Q C(Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrik: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroal) yl Sulfonic Acids	EM2122965--002	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	388-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroal) yl Sulfonic Acids	EM2122965--002	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1x63-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or ektracted outside of recommended holding times, this should be ta) en into consideration when interpreting results.

This report summarizes ektraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 546, APHA, AS and NEPM(based on the sample container provided. Dates reported represent first date of ektraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any(is provided herein.

Holding time for leachate methods (e.g. TCLP(vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 25 days & other metals 150 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is x days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not) ey analytes of interest/concern.

Matrik: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0448_SW42x_211118,	0448_SW434_211118	**15-Nov-2021**	**22-Nov-2021**	14-May-2022	✓	**22-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X)								
0448_SW393_211116,	0448_SW398_211116,	**16-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓
0448_SW395_211116,	0448_SW424_211118,							
0448_SW430_211118,	0448_SW431_211116,							
0448_SW432_211116,	0448_SW463_211118,							
0448_SW4x0_211116								
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0448_SW42x_211118,	0448_SW434_211118	**15-Nov-2021**	**22-Nov-2021**	14-May-2022	✓	**22-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X)								
0448_SW393_211116,	0448_SW398_211116,	**16-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓
0448_SW395_211116,	0448_SW424_211118,							
0448_SW430_211118,	0448_SW431_211116,							
0448_SW432_211116,	0448_SW463_211118,							
0448_SW4x0_211116								

Matrik: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0448_SW42x_211118, 0448_SW434_211118	**15-Nov-2021**	**22-Nov-2021**	14-May-2022	✓	**22-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X) 0448_SW393_211116, 0448_SW398_211116, 0448_SW395_211116, 0448_SW424_211118, 0448_SW430_211118, 0448_SW431_211116, 0448_SW432_211116, 0448_SW463_211118, 0448_SW4x0_211116	**16-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0448_SW42x_211118, 0448_SW434_211118	**15-Nov-2021**	**22-Nov-2021**	14-May-2022	✓	**22-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X) 0448_SW393_211116, 0448_SW398_211116, 0448_SW395_211116, 0448_SW424_211118, 0448_SW430_211118, 0448_SW431_211116, 0448_SW432_211116, 0448_SW463_211118, 0448_SW4x0_211116	**16-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0448_SW42x_211118, 0448_SW434_211118	**15-Nov-2021**	**22-Nov-2021**	14-May-2022	✓	**22-Nov-2021**	14-May-2022	✓
HDPE (no PTFE) (EP231X) 0448_SW393_211116, 0448_SW398_211116, 0448_SW395_211116, 0448_SW424_211118, 0448_SW430_211118, 0448_SW431_211116, 0448_SW432_211116, 0448_SW463_211118, 0448_SW4x0_211116	**16-Nov-2021**	**22-Nov-2021**	18-May-2022	✓	**22-Nov-2021**	18-May-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory 7 C samples analysed within the analytical lot3(in which the submitted sample3(was3were(processed. Actual rate should be greater than or equal to the ekpected rate. A listing of breaches is provided in the Summary of Outliers.

Matrik: **WATER**

Evaluation: × = 7 uality Control frequency not within specification ; ✓ = 7 uality Control frequency within specification.

7 uality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates 0UP(							
Per- and Polyfluoroal) yl Substances 0PFAS(by LCMSMS	EP231X	2	15	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS 7 C Standard
Laboratory Control Samples 0LCS(							
Per- and Polyfluoroal) yl Substances 0PFAS(by LCMSMS	EP231X	1	15	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS 7 C Standard
Method Blan) s 0MB(							
Per- and Polyfluoroal) yl Substances 0PFAS(by LCMSMS	EP231X	1	15	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS 7 C Standard
Matrik Spi) es 0MS(							
Per- and Polyfluoroal) yl Substances 0PFAS(by LCMSMS	EP231X	1	15	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS 7 C Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroal) yl Substances QPFAS(by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Ektraction QSPE(followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase ektraction QSPE(cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted ektract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD 7 SM 8.3, table B-18 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Ektraction QSPE(for PFAS in water	ORGx2	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase ektraction QSPE(cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted ektract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD 7 SM 8.3, table B-18 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2125903**	Page	: 1 of 10
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0937_PFASOMP	Date Samples Received	: 23-Dec-2021 09:55
Order number	:	Date Analysis Commenced	: 23-Dec-2021
C-O-C number	: 31911	Issue Date	: 31-Dec-2021 13:26
Sampler	: [redacted]		
Site	: Base Resampling		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 9		
No. of samples analysed	: 6		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2125922-012 due to sample matrix interference.
- EP231X: Samples EM2125903 required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: FRESH WATER (Matrix: WATER)			Sample ID	0445_QC500_211221	----	----	----	----
			Sampling date / time	22-Dec-2021 09:14	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2125903-004	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: FRESH WATER (Matrix: WATER)				Sample ID	0445_QC500_211221	----	----	----	----
				Sampling date / time	22-Dec-2021 09:14	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2125903-004	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**92.6**	----	----	----	----
13C8-PFOA	----	0.02	%		**99.1**	----	----	----	----

Analytical Results

Sub-Matrix: **GROUNDWATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0445_MW342_211222 Extra containers for QC	0445_QC100_211222	0445_MW307_211222	0445_QC101_211222	----
				Sampling date / time	22-Dec-2021 09:03	22-Dec-2021 09:04	22-Dec-2021 09:39	22-Dec-2021 09:40	----
					EM2125903-005	EM2125903-006	EM2125903-007	EM2125903-008	--------
					Result	Result	Result	Result	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		----	----	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		----	----	2	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		----	----	7	----	----
Total Alkalinity as CaCO3	----	1	mg/L		----	----	9	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		----	----	72	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		----	----	1360	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		----	----	437	----	----
Magnesium	7439-95-4	1	mg/L		----	----	18	----	----
Sodium	7440-23-5	1	mg/L		----	----	527	----	----
Potassium	7440-09-7	1	mg/L		----	----	7	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		----	----	40.0	----	----
ø Total Cations	----	0.01	meq/L		----	----	46.4	----	----
ø Ionic Balance	----	0.01	%		----	----	7.34	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		0.94	0.89	107	110	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		0.78	0.70	97.6	85.9	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		5.00	5.11	496	486	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		0.36	0.37	41.2	38.6	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		4.15	4.37	94.3	91.0	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		0.1	0.1	13.4	12.4	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		0.24	0.24	71.3	71.0	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW342_211222 Extra containers for QC	0445_QC100_211222	0445_MW307_211222	0445_QC101_211222	----
				Sampling date / time	22-Dec-2021 09:03	22-Dec-2021 09:04	22-Dec-2021 09:39	22-Dec-2021 09:40	----
Compound	CAS Number	LOR	Unit		EM2125903-005	EM2125903-006	EM2125903-007	EM2125903-008	--------
					Result	Result	Result	Result	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.10**	**1.13**	**170**	**168**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.08**	**0.07**	**31.5**	**32.1**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.20**	**0.21**	**44.2**	**44.8**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	**0.60**	**0.60**	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.14	<0.13	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.14	<0.13	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.14	<0.13	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.14	<0.13	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.14	<0.13	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	**0.90**	**0.91**	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**100**	**102**	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW342_211222 Extra containers for QC	0445_QC100_211222	0445_MW307_211222	0445_QC101_211222	----
				Sampling date / time	22-Dec-2021 09:03	22-Dec-2021 09:04	22-Dec-2021 09:39	22-Dec-2021 09:40	----
Compound	CAS Number	LOR	Unit		EM2125903-005	EM2125903-006	EM2125903-007	EM2125903-008	--------
					Result	Result	Result	Result	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**13.0**	**13.2**	**1270**	**1240**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**9.15**	**9.48**	**590**	**577**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**11.8**	**12.1**	**1130**	**1120**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**118**	**111**	**88.5**	**98.3**	----
13C8-PFOA	----	0.02	%		**94.7**	**99.3**	**94.8**	**93.9**	----

Analytical Results

Sub-Matrix: **RINSATE** (Matrix: **WATER**)			Sample ID	0445_QC301_211222	----	----	----	----
			Sampling date / time	22-Dec-2021 10:41	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EM2125903-009**	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)				Sample ID	0445_QC301_211222	----	----	----	----
				Sampling date / time	22-Dec-2021 10:41	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2125903-009	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		111	----	----	----	----
13C8-PFOA	----	0.02	%		103	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **FRESH WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: **RINSATE**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2125903**		
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: VIC_0937_PFASOMP	Page	: 1 of 2
Order number	:	Quote number	: EM2021LANECON0009 (SY/139/19_Bandiana)
C-O-C number	: 31911	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Base Resampling		
Sampler	: [redacted]		

Dates

Date Samples Received	: 23-Dec-2021 09:55	Issue Date	: 23-Dec-2021
Client Requested Due Date	: 06-Jan-2022	Scheduled Reporting Date	: **06-Jan-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 9.5°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 9 / 6

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM2125903-005 : 22-Dec-2021 09:03 : 0445_MW342_211222 - Extra containers for QC

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - NT-01 & 02 Ca, Mg, Na, K, Cl, SO4, Alkalinity
EM2125903-001	22-Dec-2021 09:14	0445_MW307_211221	✓		
EM2125903-002	22-Dec-2021 09:13	0445_MW342_211221	✓		
EM2125903-003	22-Dec-2021 09:13	0445_QC300_211221	✓		
EM2125903-004	22-Dec-2021 09:14	0445_QC500_211221		✓	
EM2125903-005	22-Dec-2021 09:03	0445_MW342_211222 E...		✓	
EM2125903-006	22-Dec-2021 09:04	0445_QC100_211222		✓	
EM2125903-007	22-Dec-2021 09:39	0445_MW307_211222		✓	✓
EM2125903-008	22-Dec-2021 09:40	0445_QC101_211222		✓	
EM2125903-009	22-Dec-2021 10:41	0445_QC301_211222		✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

ALL INVOICES

- A4 - AU Tax Invoice (INV) Email

DERP LAB REPORTS

- EDI Format - ESDAT (ESDAT) Email

[redacted]

CHAIN OF CUSTODY

ALS COC#: 31911 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: PFAS OMP Bandiana

SITE: Base Resampling

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_MW307_211221		22/12/2021 09:14 AM	Water	ALS: 2 Non ALS: 0	Yes	-			
002	0445_MW342_211221		22/12/2021 09:13 AM	Water	ALS: 2 Non ALS: 0	Yes	-			
003	0445_QC300_211221		22/12/2021 09:13 AM	Water	ALS: 2 Non ALS: 0	Yes	-			
004	0445_QC500_211221		22/12/2021 09:14 AM	Water	ALS: 2 Non ALS: 0	No		X		
005	0445_MW342_211222	Extra containers for QC	22/12/2021 09:03 AM	Water	ALS: 6 Non ALS: 0	No		X		
006	0445_QC100_211222		22/12/2021 09:04 AM	Water	ALS: 2 Non ALS: 0	No		X		
007	0445_MW307_211222		22/12/2021 09:39 AM	Water	ALS: 2 Non ALS: 0	No		X		
008	0445_QC101_211222		22/12/2021 09:40 AM	Water	ALS: 2 Non ALS: 0	No		X		
009	0445_QC301_211222		22/12/2021 10:41 AM	Water	ALS: 2 Non ALS: 0	No		X		

Environmental Division Melbourne

Work Order Reference

EM2125903

Telephone : + 61-3-8549 9600

Received: 23/12 #9155 Carrier: Client

C/note:

Temp: 9.5 °C Seal: Y (N)

(Ice) / Icebricks / NA

AL

Scott Huett

Subject: RE: LANECON - DEF19008 Sample drop off - Additional Analysis

From: [redacted]
Sent: Thursday, 23 December 2021 10:24 AM
To: [redacted]
Cc: [redacted]
Subject: [EXTERNAL] - DEF19008 Sample drop off

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi [redacted]

I have just dropped off some additional samples from Bandiana which were submitted via ALS compass.

Can I please request the following additional analysis (ALS compass was restricted to only PFAS analysis):

- 0445_MW307_211222 analysis of major anions / cations (5 day TAT).

Please send the SRN through when available.

Cheers,

[redacted]
ENVIRONMENTAL ENGINEER
CARDNO

Cardno now Stantec

[redacted]

CONNECT WITH CARDNO

Cardno acknowledges the Traditional Owners of the land upon which we live and work and pay our respects to their Elders past, present and emerging - learn more.

Cardno's management systems are certified to ISO9001 (quality) and AS/NZS4801/OHSAS18001 (occupational health and safety)

This email and its attachments may contain confidential and/or privileged information for the sole use of the intended recipient(s). All electronically supplied data must be checked against an applicable hardcopy version which shall be the only document which Cardno warrants accuracy. If you are not the intended recipient, any use, distribution or copying of the information contained in this email and its attachments is strictly prohibited. If you have received this email in error, please email the sender by replying to this message and immediately delete and destroy any copies of this email and any attachments. The views or opinions expressed are the author's own and may not reflect the views or opinions of Cardno.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2125903**	Page	: o f Lb
nIlevC	: **CARDNO VICTORIA PTY LTD**	t ayf raCri	: mvDEf vMevGal c EDsEf v A elyf urve
nf vGaBC	: [redacted]	nf vGaBC	: [redacted]
WSSress	: [redacted]	WSSress	: [redacted]
Tele7- f ve	: ----	Tele7- f ve	: [redacted]
Prf jeBC	: 3Hh_091h_PFWOVA P	caGe OaM7les l eBeEDeS	: 21-c eB-202o
VrSer vuMyer	:	caGe Wvali sEs nf MMevBeS	: 21-c eB-202o
n -V -n vuMyer	: 1o9oo	Hssue caGe	: 1o-c eB-202o
OaM7ler	: [redacted]		
OKGe	: Rase l esaM7lEvg		
Yuf Ge vuMyer	: OQ/o19/o9_RavSEava		
Uf . f LsaM7les reBeEDeS	: 9		
Uf . f LsaM7les avali seS	: 8		

T- Es re7f rC su7erseSes avi 7reDEus re7f rC(s) wEC GEs reLerevBe. l esulGs a77li C Ge saM7le(s) as suyMEGeS4 uvless Ge saM7lEvg was Bf vSuBGeS yi Wt O. T- Es Sf BuMevC s- all vf Cye re7rf SuBeS4exBe7CEv Lull.

T- Es YualEC nf vGf l l e7f rCBf vGaEvs Ge Lf llf wEvg EvLf rMaCEv:

- t ayf raCri cu7lEaGe (c , P) l e7f rC, l elaCEe PerBevGage c ELerevBe (l Pc) avS WBBe7GavBe t EMEs
- A eGf S Rlav5 (AR) avS t ayf raCri nf vGf l O7f5e (t n O) l e7f rC, l eBf Deri avS WBBe7GavBe t EMEs
- A aGEx O7f5e (A O) l e7f rC, l eBf Deri avS WBBe7GavBe t EMEs

Signatories

T- Es Sf BuMevC- as yeev eleBGf vBalli sEgveS yi Ge auGf rZeS sEgvaCrEes yelf w. mleBGf vBsEgvEvg Es BarrEeS f uCEv Bf M7lEavBe wEC 7rf BeSures s7eBEEeS Ev 2o n Fl ParCoo.

Signatories	*Position*	*Accreditation Category*
[redacted]	t ayf raCri nf f rSEvaCr	A elyf urve Hf rgavBEs4O7rEvgDale43Hh
[redacted]	OevEr Hf rgavBn- eMEsC	A elyf urve Hf rgavBEs4O7rEvgDale43Hh
[redacted]	OevEr VrgavBn- eMEsC	A elyf urve VrgavBEs4O7rEvgDale43Hh

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

General Comments

T- e avali OBal 7rf BeSures useS yi Wt O - aDe yeev SeDelf 7eS Lrf M esQayIEs- eS EvQervaOEvalli reBf gvEseS 7rf BeSures suB- as Gf se 7uyIEs- eS yi Ge , OmPW4 WPk W4 WO avS UmPA. Hv - f use SeDelf 7eS 7rf BeSures are Lulli DalESaQeS avS are f LQev aOCe BIEevCrequesC

I - ere Mf EsQure SeQerMEvaOEv - as yeev 7erLf rMeS4resulQs are re7f rQeS f v a Sri weEg- Cyasls.

I - ere a re7f rQeS less Gav (<) resulC Es - Eg- er Gav Ge t VI 4 GEs Mai ye Sue C 7rfEMari saM7le exCaBCSEgesQaQe SEuOEv avS/f r EvsuLLBEevC saM7le Lf r avali sEs. I - ere Ge t VI f L a re7f rQeS resulC SEtLers Lrf M sQavSarS t VI 4GEs Mai ye Sue C - Eg- Mf EsQure Bf vQev4EvsuLLBEevCsaM7le (reSuBeS weEg- CeM7lf i eS) f r MaOEx EvQerLerevBe.

Kei : Wf vi Mf us = I eLers C saM7les w- IB- are vf Cs7eBIBBalli 7arCf LGEs wf r5 f rSer yuCLf rMeS 7arCf LGe Y n 7rf Bess If C
nWO UuMyer = nWO regEsCi vuMyer Lrf M SaQayase MaEvQaEveS yi n - eMIBal WysCaBGs OerDBes. T- e n - eMIBal WysCaBGs OerDBe Es a SEDSIEv f LGe WMerBav n - eMIBal Of BteC.
t VI = t EMEf Lre7f rOEvg
I Pc = I elaOEe PerBevQage c BLerevBe
= HvSIBaQes LaIeS Y n

Laboratory Duplicate (DUP) Report

T- e qualEC Bf vCf I GerM tayf raCri cu7lBaQe reLers C a ravSf Mli seleBQeS EvCalayf raCri s7lEC tayf raCri Su7lBaQes 7rf DESe EvLf rMaOEv regarSEvg MeGf S 7reBISEv avS saM7le - eQrf geveEC. T- e 7erMEQeS ravges Lf r Ge I elaOEe PerBevC ceDaOEv (I Pc) f L tayf raCri cu7lBaQes are s7eBIBeS Ev Wt O AeGf S YI HmU/1b avS are Se7evSevC f v Ge MagvEQuSe f L resulQs Ev Bf M7arEsf v C Ge leDel f L re7f rOEvg: I esulC < o0 OBMes t VI : Uf t EMEC I esulCyeQveev o0 avS 20 OBMes t VI : 0% - N0%; I esulC> 20 OBMes t VI : 0% - 20%.

Ouy-AaOEx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
ED037P: Alkalinity by PC Titrator (QC Lot: 4098199)									
mA 2o2Nbh9-00p	Wf vi Mf us	mc 01h-P: k i Srf xESe W5alEvEC as n an V 1	c A V -2o0-00o	o	Mg/t	<o	<o	0.0	Uf t EMEC
		mc 01h-P: n aryf vaQe W5alEvEC as n an V 1	1bo2-12-8	o	Mg/t	<o	<o	0.0	Uf t EMEC
		mc 01h-P: REaryf vaQe W5alEvEC as n an V 1	ho-N2-1	o	Mg/t	b8	b8	0.0	0% - 20%
		mc 01h-P: Tf Qal W5alEvEC as n an V 1	----	o	Mg/t	b8	b8	0.0	0% - 20%
mA 2o2N9oo-001	Wf vi Mf us	mc 01h-P: k i Srf xESe W5alEvEC as n an V 1	c A V -2o0-00o	o	Mg/t	<o	<o	0.0	Uf t EMEC
		mc 01h-P: n aryf vaQe W5alEvEC as n an V 1	1bo2-12-8	o	Mg/t	<o	<o	0.0	Uf t EMEC
		mc 01h-P: REaryf vaQe W5alEvEC as n an V 1	ho-N2-1	o	Mg/t	o0b0	o0h0	o.8	0% - 20%
		mc 01h-P: Tf Qal W5alEvEC as n an V 1	----	o	Mg/t	o0b0	o0h0	o.8	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4098380)									
mA 2o2N922-00h	Wf vi Mf us	mc 0poH: OuIlaQe as OVp - TuryESEMeCEB	opb0b-h9-b	o	Mg/t	2	o	0.0	Uf t EMEC
mA 2o2N901-00h	0ppN_A I 10h_2oo222	mc 0poH: OuIlaQe as OVp - TuryESEMeCEB	opb0b-h9-b	o	Mg/t	h2	h2	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4098381)									
mA 2o2N922-008	Wf vi Mf us	mc 0pN-H: n - If rESe	o8bbh-00-8	o	Mg/t	8	8	0.0	Uf t EMEC
mA 2o2N901-00h	0ppN_A I 10h_2oo222	mc 0pN-H: n - If rESe	o8bbh-00-8	o	Mg/t	o180	o1b0	o.N	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4096771)									
mA 2o2Nbob-0o9	Wf vi Mf us	mc 091F: n alBEuM	hpp0-h0-2	o	Mg/t	<o	<o	0.0	Uf t EMEC
		mc 091F: A agvesEuM	hp19-9N-p	o	Mg/t	<o	<o	0.0	Uf t EMEC
		mc 091F: Of SEuM	hpp0-21-N	o	Mg/t	<o	<o	0.0	Uf t EMEC
		mc 091F: Pf QassEuM	hpp0-09-h	o	Mg/t	<o	<o	0.0	Uf t EMEC
mA 2o2N90o-00o	Wf vi Mf us	mc 091F: n alBEuM	hpp0-h0-2	o	Mg/t	op	op	0.0	0% - N0%
		mc 091F: A agvesEuM	hp19-9N-p	o	Mg/t	28	28	0.0	0% - 20%
		mc 091F: Of SEuM	hpp0-21-N	o	Mg/t	p0p	p0b	o.o	0% - 20%
		mc 091F: Pf QassEuM	hpp0-09-h	o	Mg/t	o2	o1	0.0	0% - N0%

Ouy-A aGEx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4097894)									
mA 2o2N901-00N	0ppN_A I 1p2_2oo222 mxCa Bf vGaEvers lf r Yn	mP21oX: PerLluf rf - exave sulLf vEBaBES (PFk xO)	1NN-p8-p	0.0o	µg/t	N00	N.o9	1.h	0% - 20%
		mP21oX: PerLluf rf f BGave sulLf vEBaBES (PFV O)	oh81-21-o	0.0o	µg/t	p.oN	1.9h	p.8	0% - 20%
		mP21oX: PerLluf rf yuGave sulLf vEBaBES (PFRO)	1hN-h1-N	0.02	µg/t	0.9p	0.91	0.0	0% - 20%
		mP21oX: PerLluf rf 7evGave sulLf vEBaBES (PFPeO)	2h08-9o-p	0.02	µg/t	0.hb	0.h8	2.8	0% - 20%
		mP21oX: PerLluf rf - e7Gave sulLf vEBaBES (PFk 7O)	1hN-92-b	0.02	µg/t	0.18	0.1b	p.b	0% - N0%
		mP21oX: PerLluf rf SeBave sulLf vEBaBES (PFc O)	11N-hh-1	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
mA 2o2N9N2-00o	Wvf vi Mf us	mP21oX: PerLluf rf - exave sulLf vEBaBES (PFk xO)	1NN-p8-p	0.0o	µg/t	0.0o	<0.0o	0.0	Uf t EMEC
		mP21oX: PerLluf rf f BGave sulLf vEBaBES (PFV O)	oh81-21-o	0.0o	µg/t	0.0N	0.0N	0.0	Uf t EMEC
		mP21oX: PerLluf rf yuGave sulLf vEBaBES (PFRO)	1hN-h1-N	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf 7evGave sulLf vEBaBES (PFPeO)	2h08-9o-p	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf - e7Gave sulLf vEBaBES (PFk 7O)	1hN-92-b	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf SeBave sulLf vEBaBES (PFc O)	11N-hh-1	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4097894)									
mA 2o2N901-00N	0ppN_A I 1p2_2oo222 mxCa Bf vGaEvers lf r Yn	mP21oX: PerLluf rf f BGavf EBaBES (PFVW)	11N-8h-o	0.0o	µg/t	0.20	0.20	0.0	0% - 20%
		mP21oX: PerLluf rf 7evGavf EBaBES (PFPeW)	2h08-90-1	0.02	µg/t	0.2p	0.2p	0.0	0% - N0%
		mP21oX: PerLluf rf - exavf EBaBES (PFk xW)	10h-2p-p	0.02	µg/t	o.o0	o.o1	2.N	0% - 20%
		mP21oX: PerLluf rf - e7Gavf EBaBES (PFk 7W)	1hN-bN-9	0.02	µg/t	0.0b	0.0b	0.0	Uf t EMEC
		mP21oX: PerLluf rf vf vavf EBaBES (PFUW)	1hN-9N-o	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf SeBavf EBaBES (PFc W)	11N-h8-2	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf uvSeBavf EBaBES (PF, vc W)	20Nb-9p-b	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf Sf SeBavf EBaBES (PFc f c W)	10h-NN-o	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf CESeBavf EBaBES (PFTrc W)	h2829-9p-b	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf GCaSeBavf EBaBES (PFTec W)	1h8-08-h	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: PerLluf rf yuGavf EBaBES (PFRW)	1hN-22-p	0.o	µg/t	0.o	0.o	0.0	Uf t EMEC
mA 2o2N9N2-00o	Wvf vi Mf us	mP21oX: PerLluf rf f BGavf EBaBES (PFVW)	11N-8h-o	0.0o	µg/t	<0.0o	<0.0o	0.0	Uf t EMEC
		mP21oX: PerLluf rf 7evGavf EBaBES (PFPeW)	2h08-90-1	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf - exavf EBaBES (PFk xW)	10h-2p-p	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf - e7Gavf EBaBES (PFk 7W)	1hN-bN-9	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf vf vavf EBaBES (PFUW)	1hN-9N-o	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf SeBavf EBaBES (PFc W)	11N-h8-2	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf uvSeBavf EBaBES (PF, vc W)	20Nb-9p-b	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf Sf SeBavf EBaBES (PFc f c W)	10h-NN-o	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf CESeBavf EBaBES (PFTrc W)	h2829-9p-b	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: PerLluf rf GCaSeBavf EBaBES (PFTec W)	1h8-08-h	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: PerLluf rf yuGavf EBaBES (PFRW)	1hN-22-p	0.o	µg/t	<0.o	<0.o	0.0	Uf t EMEC
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4097894)									
mA 2o2N901-00N	0ppN_A I 1p2_2oo222 mxCa Bf vGaEvers lf r Yn	mP21oX: PerLluf rf f BGave sulLf vaMESe (FV OW)	hNp-9o-8	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC

Ouy-A aGEx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4097894) - continued									
mA 2o2N901-00N	0ppN_A l 1p2_2oo222 mxCa Bf vGaEvers lf r Yn	mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESf aBeCBaBES (A eFV OWW)	21NN-1o-9	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESf aBeCBaBES (mCFV OWW)	299o-N0-8	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESe (A eFV OW)	1oN08-12-b	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESe (mCFV OW)	poNo-N0-2	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESf eGavf l (A eFV Om)	2pppb-09-h	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESf eGavf l (mCFV Om)	o89o-99-2	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
mA 2o2N9N2-00o	Wf vi Mf us	mP21oX: PerLluf rf f BGave sullf vaMESe (FV OW)	hNp-9o-8	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESf aBeCBaBES (A eFV OWW)	21NN-1o-9	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESf aBeCBaBES (mCFV OWW)	299o-N0-8	0.02	µg/t	<0.02	<0.02	0.0	Uf t EMEC
		mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESe (A eFV OW)	1oN08-12-b	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESe (mCFV OW)	poNo-N0-2	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESf eGavf l (A eFV Om)	2pppb-09-h	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESf eGavf l (mCFV Om)	o89o-99-2	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4097894)									
mA 2o2N901-00N	0ppN_A l 1p2_2oo222 mxCa Bf vGaEvers lf r Yn	mP21oX: p:2 Fluf rf GElf Mer sullf vBaBES (p:2 FTO)	hNho2p-h2-p	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: 8:2 Fluf rf GElf Mer sullf vBaBES (8:2 FTO)	2h8o9-9h-2	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: b:2 Fluf rf GElf Mer sullf vBaBES (b:2 FTO)	19o0b-1p-p	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: o0:2 Fluf rf GElf Mer sullf vBaBES (o0:2 FTO)	o20228-80-0	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
mA 2o2N9N2-00o	Wf vi Mf us	mP21oX: p:2 Fluf rf GElf Mer sullf vBaBES (p:2 FTO)	hNho2p-h2-p	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: 8:2 Fluf rf GElf Mer sullf vBaBES (8:2 FTO)	2h8o9-9h-2	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
		mP21oX: b:2 Fluf rf GElf Mer sullf vBaBES (b:2 FTO)	19o0b-1p-p	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC

Ouy-A aGEx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4097894) - continued									
mA 2o2N9N2-00o	Wvf vi Mf us	mP21oX: o0:2 Fluf rf Gelf Mer sullf vBaBES (o0:2 FTO)	o20228-80-0	0.0N	µg/t	<0.0N	<0.0N	0.0	Uf t EMEC
EP231P: PFAS Sums (QC Lot: 4097894)									
mA 2o2N901-00N	0ppN_A l 1p2_2oo222 mxCa Bf vGaEvers lf r Yn	mP21oX: OuM f LPFWO	----	0.0o	µg/t	o1.0	o1.0	0.2	0% - 20%
		mP21oX: OuM f LPFk xO avS PFVO	1NN-p8-p/oh81-21-o	0.0o	µg/t	9.oN	9.o8	0.o	0% - 20%
		mP21oX: OuM f LPFWO (l Wc m t EsC)	----	0.0o	µg/t	oo.b	oo.b	0.1	0% - 20%
mA 2o2N9N2-00o	Wvf vi Mf us	mP21oX: OuM f LPFWO	----	0.0o	µg/t	0.08	0.0N	ob.2	Uf t EMEC
		mP21oX: OuM f LPFk xO avS PFVO	1NN-p8-p/oh81-21-o	0.0o	µg/t	0.08	0.0N	ob.2	Uf t EMEC
		mP21oX: OuM f LPFWO (l Wc m t EsC)	----	0.0o	µg/t	0.08	0.0N	ob.2	Uf t EMEC

Method Blank (MB) and Laboratory Control Sample (LCS) Report

T-e qualEC BfvCfl GerM AeGfS / tayfraCri Rlav5 relers C av avali Ge Lree MaCEx C w-EB- all reagevGs are aSSeS Ev Ge saMe DfluMes f r 7rf 7f rCEvs as useS Ev sGvSarS saM7le 7re7araCEv. T-e 7ur7f se f LGEs Yn 7araMeGer Es C Mf vECr 7f GevCal layfraCri BfvGaMEvaCEv. T-e qualEC BfvCfl GerM tayfraCri nfvCfl OaM7le (t nO) relers C a BerCEEeS relerevBe MaGerEal4 f r a 5vf wv EvGerlerevBe Lree MaCEx s7E5eS wES GargeC avali Ges. T-e 7ur7f se f LGEs Yn 7araMeGer Es C Mf vECr MeGf S 7reBEEv avS aBBuraBi EvSe7evSevCf LsaM7le MaCEx. c i vaMEBI eBf Deri t EMES are yaseS f v sGCEGBal eDaluaCEv f L7rf BesseS t nO.

Ouy-A aCEx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
ED037P: Alkalinity by PC Titrator (QCLot: 4098199)								
mc 01h-P: Tf Gal W5alEvEC as n anV 1	----	----	Mg/t	----	200 Mg/t	oop	bN.0	oo8
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4098380)								
mc 0poH: OullaGe as OVp - TuryESEMeCEB	opb0b-h9-b	o	Mg/t	<o	2N Mg/t	o08	bN.b	ooh
				<o	N00 Mg/t	o0h	b0.0	o20
ED045G: Chloride by Discrete Analyser (QCLot: 4098381)								
mc 0pN-H: n - lf rESe	o8bbh-00-8	o	Mg/t	<o	o0 Mg/t	90.9	bN.0	ooN
				<o	o000 Mg/t	9b.o	bN.0	o22
ED093F: Dissolved Major Cations (QCLot: 4096771)								
mc 091F: n alBEEM	hpp0-h0-2	o	Mg/t	<o	N0 Mg/t	98.h	b0.0	o20
mc 091F: A agvesEEM	hp19-9N-p	o	Mg/t	<o	N0 Mg/t	9N.2	b0.0	o20
mc 091F: Of SEEM	hpp0-21-N	o	Mg/t	<o	N0 Mg/t	o02	b0.0	o20
mc 091F: Pf GassEEM	hpp0-09-h	o	Mg/t	<o	N0 Mg/t	o0o	b0.0	o20
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4097894)								
mP21oX: Perluf rf yuGave sullf vEBaBES (PFRO)	1hN-h1-N	0.02	µg/t	<0.02	0.222 µg/t	o02	h2.0	o10
mP21oX: Perluf rf 7evGave sullf vEBaBES (PFPeO)	2h08-9o-p	0.02	µg/t	<0.02	0.21N µg/t	99.b	ho.0	o2h
mP21oX: Perluf rf - exave sullf vEBaBES (PFk xO)	1NN-p8-p	0.0o	µg/t	<0.0o	0.22b µg/t	o0p	8b.0	o1o
mP21oX: Perluf rf - e7Gave sullf vEBaBES (PFk 7O)	1hN-92-b	0.02	µg/t	<0.02	0.2N µg/t	oo0	89.0	o1p
mP21oX: Perluf rf f BGave sullf vEBaBES (PFVO)	oh81-21-o	0.0o	µg/t	<0.0o	0.212 µg/t	9N.1	8N.0	op0
mP21oX: Perluf rf SeBave sullf vEBaBES (PFc O)	11N-hh-1	0.02	µg/t	<0.02	0.2po µg/t	o0p	N1.0	op2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4097894)								
mP21oX: Perluf rf yuGavf EBaBES (PFRW)	1hN-22-p	0.o	µg/t	<0.o	o.2N µg/t	91.9	h1.0	o29
mP21oX: Perluf rf 7evGavf EBaBES (PFPeW)	2h08-90-1	0.02	µg/t	<0.02	0.2N µg/t	9b.h	h2.0	o29
mP21oX: Perluf rf - exavf EBaBES (PFk xW)	10h-2p-p	0.02	µg/t	<0.02	0.2N µg/t	98.9	h2.0	o29
mP21oX: Perluf rf - e7Gavf EBaBES (PFk 7W)	1hN-bN-9	0.02	µg/t	<0.02	0.2N µg/t	o00	h2.0	o10
mP21oX: Perluf rf f BGavf EBaBES (PFVW)	11N-8h-o	0.0o	µg/t	<0.0o	0.2N µg/t	99.9	ho.0	o11
mP21oX: Perluf rf vf vavf EBaBES (PFUW)	1hN-9N-o	0.02	µg/t	<0.02	0.2N µg/t	9b.1	89.0	o10
mP21oX: Perluf rf SeBavf EBaBES (PFc W)	11N-h8-2	0.02	µg/t	<0.02	0.2N µg/t	9h.2	ho.0	o29
mP21oX: Perluf rf uvSeBavf EBaBES (PF, vc W)	20Nb-9p-b	0.02	µg/t	<0.02	0.2N µg/t	o08	89.0	o11
mP21oX: Perluf rf Sf SeBavf EBaBES (PFc f c W)	10h-NN-o	0.02	µg/t	<0.02	0.2N µg/t	o02	h2.0	o1p
mP21oX: Perluf rf CESeBavf EBaBES (PFTrc W)	h2829-9p-b	0.02	µg/t	<0.02	0.2N µg/t	o0o	8N.0	opp
mP21oX: Perluf rf GeCaSeBavf EBaBES (PFTec W)	1h8-08-h	0.0N	µg/t	<0.0N	0.82N µg/t	o0p	ho.0	o12
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4097894)								
mP21oX: Perluf rf f BGave sullf vaMESe (FVOW)	hNp-9o-8	0.02	µg/t	<0.02	0.2N µg/t	9h.1	8h.0	o1h
mP21oX: U-A eGi l 7erluf rf f BGave sullf vaMESe (A eFVOW)	1oN08-12-b	0.0N	µg/t	<0.0N	0.82N µg/t	o28	8b.0	opo

Ouy-A aCEx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4097894) - continued								
mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESe (mCFVOW)	poNo-N0-2	0.0N	µg/t	<0.0N	0.82N µg/t	ooN	h0.0	o10
mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESf eGavf l (A eFVOm)	2pppb-09-h	0.0N	µg/t	<0.0N	0.82N µg/t	9o.N	h0.0	o10
mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESf eGavf l (mCFVOm)	o89o-99-2	0.0N	µg/t	<0.0N	0.82N µg/t	99.1	h0.0	o10
mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESf aBeCBaBES (A eFVOWW)	21NN-1o-9	0.02	µg/t	<0.02	0.2N µg/t	o0o	8N.0	o18
mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESf aBeCBaBES (mCFVOWW)	299o-N0-8	0.02	µg/t	<0.02	0.2N µg/t	o0p	8o.0	o1N
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4097894)								
mP21oX: p:2 Fluf rf Gelf Mer sullf vBaBES (p:2 FTO)	hNho2p-h2-p	0.0N	µg/t	<0.0N	0.21p µg/t	oo0	81.0	op1
mP21oX: 8:2 Fluf rf Gelf Mer sullf vBaBES (8:2 FTO)	2h8o9-9h-2	0.0N	µg/t	<0.0N	0.21b µg/t	o0p	8p.0	op0
mP21oX: b:2 Fluf rf Gelf Mer sullf vBaBES (b:2 FTO)	19o0b-1p-p	0.0N	µg/t	<0.0N	0.2p µg/t	o00	8h.0	o1b
mP21oX: o0:2 Fluf rf Gelf Mer sullf vBaBES (o0:2 FTO)	o20228-80-0	0.0N	µg/t	<0.0N	0.2p2 µg/t	bp.8	h0.0	o10
EP231P: PFAS Sums (QCLot: 4097894)								
mP21oX: OuM f LPFWO	---	0.0o	µg/t	<0.0o	----	----	----	----
mP21oX: OuM f LPFk xO avS PFVO	1NN-p8-p/oh 81-21-o	0.0o	µg/t	<0.0o	----	----	----	----
mP21oX: OuM f LPFWO (I Wc m t EsC)	---	0.0o	µg/t	<0.0o	----	----	----	----

Matrix Spike (MS) Report

T- e qualEC Bf vCf l GerM AaCEx O7E5e (AO) relers C av EvCalayf raCri s7lEC saM7le s7E5eS wEC a re7resevGCEe seC f L GargeC avali Ges. T- e 7ur7f se f L GEs Yn 7araMeGr Es C Mf vEC r 7f GevCal MaCEx eLeBGs f v avali Ge reBf DerEes. OGaCBI eBf Deri t EMEs as 7er layf raCri c aGa YualEC VyjeBCEDes (c YVs). HSeal reBf Deri ravges sGaGeS Mai ye waEDeS Ev Ge eDevCf LsaM7le MaCEx EvGerLerevBe.

Ouy-A aCEx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4098380)							
mA 2o2N9o9-00o	Ww f vi Mf us	mc 0poH: OuILaGe as OVp - TuryESEMeGCB	opb0b-h9-b	o00 Mg/t	# Uf C c eGerMEveS	h0.0	o10
ED045G: Chloride by Discrete Analyser (QCLot: 4098381)							
mA 2o2N9o9-00o	Ww f vi Mf us	mc 0pNH: n - lf rESe	o8bbh-00-8	p00 Mg/t	# Uf C c eGerMEveS	h0.0	op2
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4097894)							
mA 2o2N922-0o2	Ww f vi Mf us	mP21oX: PerLluf rf yuGave sullf vBaBES (PFRO)	1hN-h1-N	0.222 µg/t	oo0	h2.0	o10
		mP21oX: PerLluf rf 7evGave sullf vBaBES (PFPeO)	2h08-9o-p	0.21N µg/t	o28	ho.0	o2h
		mP21oX: PerLluf rf - exave sullf vBaBES (PFk xO)	1NN-p8-p	0.22b µg/t	o22	8b.0	o1o
		mP21oX: PerLluf rf - e7Gave sullf vBaBES (PFk 7O)	1hN-92-b	0.21b µg/t	ooN	89.0	o1p

Ouy-A aGEx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4097894) - continued							
mA 2o2N922-0o2	Wf vi Mf us	mP21oX: Perluf rf f BGave sullf vlBaBES (PFVO)	oh81-21-o	0.212 µg/t	o02	8N.0	op0
		mP21oX: Perluf rf SeBave sullf vlBaBES (PFc O)	11N-hh-1	0.2po µg/t	b8.2	N1.0	op2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4097894)							
mA 2o2N922-0o2	Wf vi Mf us	mP21oX: Perluf rf yuGavf lBaBES (PFRW)	1hN-22-p	o.2N µg/t	o02	h1.0	o29
		mP21oX: Perluf rf 7evGavf lBaBES (PFPeW)	2h08-90-1	0.2N µg/t	o09	h2.0	o29
		mP21oX: Perluf rf - exavf lBaBES (PFk xW)	10h-2p-p	0.2N µg/t	# Uf C c eGerMEveS	h2.0	o29
		mP21oX: Perluf rf - e7Gavf lBaBES (PFk 7W)	1hN-bN-9	0.2N µg/t	# Uf C c eGerMEveS	h2.0	o10
		mP21oX: Perluf rf f BGavf lBaBES (PFVW)	11N-8h-o	0.2N µg/t	o28	ho.0	o11
		mP21oX: Perluf rf vf vavf lBaBES (PFUW)	1hN-9N-o	0.2N µg/t	98.h	89.0	o10
		mP21oX: Perluf rf SeBavf lBaBES (PFc W)	11N-h8-2	0.2N µg/t	o2N	ho.0	o29
		mP21oX: Perluf rf uvSeBavf lBaBES (PF, vc W)	20Nb-9p-b	0.2N µg/t	9b.2	89.0	o11
		mP21oX: Perluf rf Sf SeBavf lBaBES (PFc f c W)	10h-NN-o	0.2N µg/t	92.2	h2.0	o1p
		mP21oX: Perluf rf GESeBavf lBaBES (PFTrc W)	h2829-9p-b	0.2N µg/t	h2.p	8N.0	opp
		mP21oX: Perluf rf GGaSeBavf lBaBES (PFTec W)	1h8-08-h	0.82N µg/t	ooh	ho.0	o12
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4097894)							
mA 2o2N922-0o2	Wf vi Mf us	mP21oX: Perluf rf f BGave sullf vaMESe (FVOW)	hNp-9o-8	0.2N µg/t	bb.b	8h.0	o1h
		mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESe (A eFVOW)	1oN08-12-b	0.82N µg/t	o21	8b.0	opo
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESe (mGFVOW)	poNo-N0-2	0.82N µg/t	hp.o	h0.0	o10
		mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESf eGavf l (A eFVOm)	2pppb-09-h	0.82N µg/t	b9.9	h0.0	o10
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESf eGavf l (mGFVOm)	o89o-99-2	0.82N µg/t	o09	h0.0	o10
		mP21oX: U-A eGi l 7erLluf rf f BGave sullf vaMESf aBeGB aBES (A eFVOWW)	21NN-1o-9	0.2N µg/t	# Uf C c eGerMEveS	8N.0	o18
		mP21oX: U-mGi l 7erLluf rf f BGave sullf vaMESf aBeGB aBES (mGFVOWW)	299o-N0-8	0.2N µg/t	9p.N	8o.0	o1N
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4097894)							
mA 2o2N922-0o2	Wf vi Mf us	mP21oX: p:2 Fluf rf GelF Mer sullf vlBaBES (p:2 FTO)	hNho2p-h2-p	0.21p µg/t	o0p	81.0	op1
		mP21oX: 8:2 Fluf rf GelF Mer sullf vlBaBES (8:2 FTO)	2h8o9-9h-2	0.21b µg/t	92.0	8p.0	op0
		mP21oX: b:2 Fluf rf GelF Mer sullf vlBaBES (b:2 FTO)	19o0b-1p-p	0.2p µg/t	bb.2	8h.0	o1b
		mP21oX: o0:2 Fluf rf GelF Mer sullf vlBaBES (o0:2 FTO)	o20228-80-0	0.2p2 µg/t	# N1.o	h0.0	o10

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2125903**	Page	: 1 of 5
Client	: **CARDNO VICTORIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0937_PFASOMP	Date Samples Received	: 23-Dec-2021
Site	: Base Resampling	Issue Date	: 31-Dec-2021
Sampler	: [redacted]	No. of samples received	: 9
Order number	:	No. of samples analysed	: 6

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM2125919--001	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	EM2125919--001	Anonymous	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM2125922--012	Anonymous	**Perfluorohexanoic acid (PFHxA)**	307-24-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM2125922--012	Anonymous	**Perfluoroheptanoic acid (PFHpA)**	375-85-9	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231C: Perfluoroalkyl Sulfonamides	EM2125922--012	Anonymous	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EM2125922--012	Anonymous	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	53.1 %	70.0-130%	**Recovery less than lower data quality objective**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
0445_MW307_211222	**22-Dec-2021**	**----**	----	----	**24-Dec-2021**	05-Jan-2022	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
0445_MW307_211222	**22-Dec-2021**	**----**	----	----	**24-Dec-2021**	19-Jan-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G)							
0445_MW307_211222	**22-Dec-2021**	**----**	----	----	**24-Dec-2021**	19-Jan-2022	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Natural (ED093F)							
0445_MW307_211222	**22-Dec-2021**	**----**	----	----	**24-Dec-2021**	29-Dec-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_QC500_211221, 0445_QC100_211222, 0445_QC101_211222, 0445_MW342_211222 - Extra containers for QC, 0445_MW307_211222, 0445_QC301_211222	**22-Dec-2021**	**24-Dec-2021**	20-Jun-2022	✓	**24-Dec-2021**	20-Jun-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0445_QC500_211221, 0445_QC100_211222, 0445_QC101_211222, 0445_MW342_211222 - Extra containers for QC, 0445_MW307_211222, 0445_QC301_211222	**22-Dec-2021**	**24-Dec-2021**	20-Jun-2022	✓	**24-Dec-2021**	20-Jun-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0445_QC500_211221, 0445_QC100_211222, 0445_QC101_211222, 0445_MW342_211222 - Extra containers for QC, 0445_MW307_211222, 0445_QC301_211222	**22-Dec-2021**	**24-Dec-2021**	20-Jun-2022	✓	**24-Dec-2021**	20-Jun-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_QC500_211221, 0445_QC100_211222, 0445_QC101_211222, 0445_MW342_211222 - Extra containers for QC, 0445_MW307_211222, 0445_QC301_211222	**22-Dec-2021**	**24-Dec-2021**	20-Jun-2022	✓	**24-Dec-2021**	20-Jun-2022	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_QC500_211221, 0445_QC100_211222, 0445_QC101_211222, 0445_MW342_211222 - Extra containers for QC, 0445_MW307_211222, 0445_QC301_211222	**22-Dec-2021**	**24-Dec-2021**	20-Jun-2022	✓	**24-Dec-2021**	20-Jun-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Alkalinity by PC Titrator	ED037-P	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chloride by Discrete Analyser	ED045G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Chloride by Discrete Analyser	ED045G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm APHA seal method 2 017-1-L
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Cardno Victoria Pty Ltd
[redacted]

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **841785-W**
Project name DEF19008
Received Date Nov 17, 2021

Client Sample ID			QC200_211110	QC201_211110	QC202_211110	QC203_211111
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-No39416	M21-No39417	M21-No39418	M21-No39419
Date Sampled			Nov 10, 2021	Nov 10, 2021	Nov 10, 2021	Nov 11, 2021
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.96
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.01	< 0.01	1.4
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	0.02	< 0.01	6.9
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]1.6
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]3.4
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.02
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	106	94	105	88
13C5-PFPeA (surr.)	1	%	112	104	119	92
13C5-PFHxA (surr.)	1	%	114	115	117	98
13C4-PFHpA (surr.)	1	%	113	120	120	90
13C8-PFOA (surr.)	1	%	118	126	129	90
13C5-PFNA (surr.)	1	%	106	119	116	89
13C6-PFDA (surr.)	1	%	67	87	90	48
13C2-PFUnDA (surr.)	1	%	58	72	71	63
13C2-PFDoDA (surr.)	1	%	75	79	79	151
13C2-PFTeDA (surr.)	1	%	40	32	57	123
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	112	126	122	133
D3-N-MeFOSA (surr.)	1	%	71	90	70	102
D5-N-EtFOSA (surr.)	1	%	65	85	61	97
D7-N-MeFOSE (surr.)	1	%	104	109	83	115

Client Sample ID			QC200_211110	QC201_211110	QC202_211110	QC203_211111
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-No39416	M21-No39417	M21-No39418	M21-No39419
Date Sampled			Nov 10, 2021	Nov 10, 2021	Nov 10, 2021	Nov 11, 2021
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D9-N-EtFOSE (surr.)	1	%	99	109	78	111
D5-N-EtFOSAA (surr.)	1	%	66	91	90	112
D3-N-MeFOSAA (surr.)	1	%	67	88	93	67
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	0.01	0.04	4.7
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[R16]< 0.1
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.02	1.5
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.03	[N09]4.6
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.12	0.16	[N09]37
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]1.7
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	0.39	0.03	[N09]47
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	107	108	116	75
18O2-PFHxS (surr.)	1	%	83	90	94	75
13C8-PFOS (surr.)	1	%	72	88	89	86
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.08
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	122	139	133	100
13C2-6:2 FTSA (surr.)	1	%	138	161	166	105
13C2-8:2 FTSA (surr.)	1	%	160	112	100	60
13C2-10:2 FTSA (surr.)	1	%	82	83	106	82
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.51	0.19	84
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.39	0.03	50.4
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.51	0.19	87.4
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	0.55	0.23	103.04
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	0.55	0.28	110.86

Client Sample ID			QC204_211111	QC205_211111
Sample Matrix			Water	Water
Eurofins Sample No.			M21-No39420	M21-No39421
Date Sampled			Nov 11, 2021	Nov 11, 2021
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.33	0.95
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.36	[N09]1.3
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	1.9	[N09]7.0
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.32	[N09]1.1
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	0.65	[N09]2.8
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01

Client Sample ID			QC204_211111	QC205_211111
Sample Matrix			Water	Water
Eurofins Sample No.			M21-No39420	M21-No39421
Date Sampled			Nov 11, 2021	Nov 11, 2021
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	95	94
13C5-PFPeA (surr.)	1	%	114	121
13C5-PFHxA (surr.)	1	%	81	101
13C4-PFHpA (surr.)	1	%	105	100
13C8-PFOA (surr.)	1	%	103	91
13C5-PFNA (surr.)	1	%	116	62
13C6-PFDA (surr.)	1	%	90	43
13C2-PFUnDA (surr.)	1	%	79	128
13C2-PFDoDA (surr.)	1	%	113	149
13C2-PFTeDA (surr.)	1	%	76	106
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	124	109
D3-N-MeFOSA (surr.)	1	%	86	68
D5-N-EtFOSA (surr.)	1	%	80	85
D7-N-MeFOSE (surr.)	1	%	105	105
D9-N-EtFOSE (surr.)	1	%	106	105
D5-N-EtFOSAA (surr.)	1	%	106	146
D3-N-MeFOSAA (surr.)	1	%	93	143
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	1.2	4.0
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.53	1.4
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.96	[N09]5.0
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]7.0	[N09]50
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	0.57	[N09]2.8
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]4.3	[N09]19
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	100	94
18O2-PFHxS (surr.)	1	%	105	82
13C8-PFOS (surr.)	1	%	95	89

Client Sample ID			QC204_211111	QC205_211111
Sample Matrix			Water	Water
Eurofins Sample No.			M21-No39420	M21-No39421
Date Sampled			Nov 11, 2021	Nov 11, 2021
Test/Reference	LOR	Unit		
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	0.09	0.43
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	86	78
13C2-6:2 FTSA (surr.)	1	%	112	61
13C2-8:2 FTSA (surr.)	1	%	157	30
13C2-10:2 FTSA (surr.)	1	%	79	111
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	11.3	69
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	4.95	21.8
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	11.95	71.8
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	16.15	86.58
Sum of PFASs (n=30)*	0.1	ug/L	18.21	95.78

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Nov 19, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Nov 19, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Nov 19, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Nov 19, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Nov 18, 2021	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: DEF19008

Order No.:
Report #: 841785
Phone: 8415 7777
Fax: 8415 7788

Received: Nov 17, 2021 9:00 AM
Due: Nov 24, 2021
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794						
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	QC200_211110	Nov 10, 2021		Water	M21-No39416	X
2	QC201_211110	Nov 10, 2021		Water	M21-No39417	X
3	QC202_211110	Nov 10, 2021		Water	M21-No39418	X
4	QC203_211111	Nov 11, 2021		Water	M21-No39419	X
5	QC204_211111	Nov 11, 2021		Water	M21-No39420	X
6	QC205_211111	Nov 11, 2021		Water	M21-No39421	X

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: DEF19008

Order No.:
Report #: 841785
Phone: 8415 7777
Fax: 8415 7788

Received: Nov 17, 2021 9:00 AM
Due: Nov 24, 2021
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254	X
Sydney Laboratory - NATA # 1261 Site # 18217	
Brisbane Laboratory - NATA # 1261 Site # 20794	
Mayfield Laboratory - NATA # 1261 Site # 25079	
Perth Laboratory - NATA # 2377 Site # 2370	
External Laboratory	
Test Counts	6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	106			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	90			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	96			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	94			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	107			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	102			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	106			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	102			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	105			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	149			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	88			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	106			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	90			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	100			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	107			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	101			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	88			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	89			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	109			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	98			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	65			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	137			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	102			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M21-No48243	NCP	%	110			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M21-No48243	NCP	%	76			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M21-No48243	NCP	%	90			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M21-No48243	NCP	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M21-No48243	NCP	%	103			50-150	Pass	
Perfluorononanoic acid (PFNA)	M21-No48243	NCP	%	105			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M21-No48243	NCP	%	97			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M21-No48243	NCP	%	108			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M21-No48243	NCP	%	110			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M21-No48243	NCP	%	210			50-150	Fail	
Perfluorotetradecanoic acid (PFTeDA)	M21-No48243	NCP	%	109			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M21-No48243	NCP	%	94			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M21-No48243	NCP	%	112			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M21-No48243	NCP	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M21-No48243	NCP	%	107			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M21-No48243	NCP	%	115			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M21-No48243	NCP	%	110			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M21-No48243	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M21-No48243	NCP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M21-No48243	NCP	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M21-No48243	NCP	%	98			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M21-No48243	NCP	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M21-No48243	NCP	%	84			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M21-No48243	NCP	%	104			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M21-No48243	NCP	%	145			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M21-No48243	NCP	%	51			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M21-No48243	NCP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M21-No48243	NCP	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M21-No48243	NCP	%	125			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M21-No48243	NCP	%	95			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorononanoic acid (PFNA)	M21-No48242	NCP	ug/L	0.01	0.01	4.0	30%	Pass	
Perfluorodecanoic acid (PFDA)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M21-No48242	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M21-No48242	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M21-No48242	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M21-No48242	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M21-No48242	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M21-No48242	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M21-No48242	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorodecanesulfonic acid (PFDS)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M21-No48242	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M21-No48242	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M21-No39419	CP	ug/L	0.96	1.1	17	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M21-No39419	CP	ug/L	1.4	1.7	22	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M21-No39419	CP	ug/L	6.9	8.4	19	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M21-No39419	CP	ug/L	1.6	1.9	18	30%	Pass	
Perfluorooctanoic acid (PFOA)	M21-No39419	CP	ug/L	3.4	4.2	23	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M21-No39419	CP	ug/L	4.7	4.9	6.0	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M21-No39419	CP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M21-No39419	CP	ug/L	1.5	1.5	2.0	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M21-No39419	CP	ug/L	4.6	4.8	4.0	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M21-No39419	CP	ug/L	37	41	9.0	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M21-No39419	CP	ug/L	1.7	2.8	52	30%	Fail	
Perfluorooctanesulfonic acid (PFOS)	M21-No39419	CP	ug/L	47	59	23	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
R16	The LORs have been raised due to the high concentration of one or more analytes

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS (VIC)

[redacted]

General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins | Environment Testing

www.eurofins.com.au [redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Sample Receipt Advice

Company name:	Cardno Victoria Pty Ltd
Contact name:	[redacted]
Project name:	DEF19008
Project ID:	Not provided
Turnaround time:	5 Day
Date/Time received	Nov 17, 2021 9:00 AM
Eurofins reference	841785

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] **on phone :** [redacted] **or by email:** [redacted]

Results will be delivered electronically via email to [redacted] - [redacted]

Note: A copy of these results will also be delivered to the general Cardno Victoria Pty Ltd email address.

Global Leader - Results you can trust

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: DEF19008

Order No.:
Report #: 841785
Phone: 8415 7777
Fax: 8415 7788

Received: Nov 17, 2021 9:00 AM
Due: Nov 24, 2021
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794						
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	QC200_211110	Nov 10, 2021		Water	M21-No39416	X
2	QC201_211110	Nov 10, 2021		Water	M21-No39417	X
3	QC202_211110	Nov 10, 2021		Water	M21-No39418	X
4	QC203_211111	Nov 11, 2021		Water	M21-No39419	X
5	QC204_211111	Nov 11, 2021		Water	M21-No39420	X
6	QC205_211111	Nov 11, 2021		Water	M21-No39421	X

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: DEF19008

Order No.:
Report #: 841785
Phone: 8415 7777
Fax: 8415 7788

Received: Nov 17, 2021 9:00 AM
Due: Nov 24, 2021
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254	X
Sydney Laboratory - NATA # 1261 Site # 18217	
Brisbane Laboratory - NATA # 1261 Site # 20794	
Mayfield Laboratory - NATA # 1261 Site # 25079	
Perth Laboratory - NATA # 2377 Site # 2370	
External Laboratory	
Test Counts	6

Cardno

PLEASE FWD TO EUROFINS

22518

Chain of Custody

Sheet 1 of 1

PM Name: [redacted]

Phone: [redacted]

Address: Level 4, 501 Swanston Street, Melbourne, Vic 3000

PM Email: [redacted]

Project Number: DEF19008

Laboratory (name, phone,fax no & contact person)

EUROFINS

Sample ID	Laboratory ID	Container	Sampling Date	Sampling Time	Sample Matrix: Water	Soil	Sample preservation: Ice	Analysis: PFAS (28 Analyte Suite)	HOLD
QC200-211110		2x 20ml PFAS	10.11.21		x		x		
QC201-211110		↓	10.11.21		x		x		
QC202-211110			10.11.21		x		x		
QC203-211111			11.11.21		x		x		
QC204-211111			11.11.21		x		x		
QC205-211111		↓	11.11.21		x		x		

(7)

CT 17/11/21 9a
ICF
5.4
to 5
6.4
Courier

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples.

Sampler name: (print and signature) [redacted] Date 12.11.21

Relinquished by (Sampler): (print and signature)	Date	Time	Received by (Courier/Lab): (print and signature)	Date	Time
[redacted]	15.11.21				
[redacted] (ALS)	Date 16/11/21	Time	Received by: (print and signature)	Date	Time
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time

Received 15/11 1655 Cardno
C/note:
Temp: 3.4 °C Seal: Y/N
Icebricks / PA

841785 [redacted]

Revision 2
Approved 2 December 2016

TURN AROUND TIME: 5 DAYS

RE: SAMPLES ON HOLD 841785

[redacted]

Thu 18/11/2021 12:02 PM

To: [redacted]

Cc: #AU_CAU001_EnviroSampleVic [redacted]

EXTERNAL EMAIL*

Hi [redacted]

Apologies, can all samples please be scheduled for PFAS analysis.

Kind Regards,

[redacted]
ENVIRONMENTAL ENGINEER
CARDNO

Cardno

Phone [redacted]
Address [redacted]

Email [redacted]
CONNECT WITH CARDNO

841785
c/o EF
18/11/21.

Cardno acknowledges the Traditional Owners of the land upon which we live and work and pay our respects to their Elders past, present and emerging - learn more.

Cardno's management systems are certified to ISO9001 (quality) and AS4801/OHSAS18001 (occupational health and safety)

This email and its attachments may contain confidential and/or privileged information for the sole use of the intended recipient(s). All electronically supplied data must be checked against an applicable hardcopy version which shall be the only document which Cardno warrants accuracy. If you are not the intended recipient, any use, distribution or copying of the information contained in this email and its attachments is strictly prohibited. If you have received this email in error, please email the sender by replying to this message and immediately delete and destroy any copies of this email and any attachments. The views or opinions expressed are the author's own and may not reflect the views or opinions of Cardno.

From: [redacted]
Sent: Thursday, 18 November 2021 9:36 AM
To: [redacted]
Cc: #AU_CAU001_EnviroSampleVic [redacted]
Subject: SAMPLES ON HOLD 841785

Hi [redacted]
Can you advise the analysis required on the attached COC?

Kind Regards,

[redacted]
Analytical Services Manager

Eurofins |

Cardno Victoria Pty Ltd
[redacted]

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **842787-W**
Project name
Project ID DEF19008
Received Date Nov 19, 2021

Client Sample ID			0445_QC206_211115	0445_QC207_211117	0445_QC208_211115	0445_QC209_211116
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M21-No48242**	**M21-No48243**	**M21-No48244**	**M21-No48245**
Date Sampled			**Nov 15, 2021**	**Nov 17, 2021**	**Nov 15, 2021**	**Nov 16, 2021**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.08	< 0.05	0.06	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.07	0.03	0.04	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.10	0.04	0.10	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.03	0.01	0.02	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	0.05	0.02	0.04	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	92	109	100	106
13C5-PFPeA (surr.)	1	%	97	114	107	113
13C5-PFHxA (surr.)	1	%	104	122	111	123
13C4-PFHpA (surr.)	1	%	103	121	113	120
13C8-PFOA (surr.)	1	%	113	133	122	130
13C5-PFNA (surr.)	1	%	100	117	111	121
13C6-PFDA (surr.)	1	%	69	82	77	78
13C2-PFUnDA (surr.)	1	%	49	59	55	71
13C2-PFDoDA (surr.)	1	%	41	52	53	66
13C2-PFTeDA (surr.)	1	%	15	28	25	33
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	94	115	104	103
D3-N-MeFOSA (surr.)	1	%	47	72	46	72

Client Sample ID			0445_QC206_211115	0445_QC207_211117	0445_QC208_211115	0445_QC209_211116
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M21-No48242**	**M21-No48243**	**M21-No48244**	**M21-No48245**
Date Sampled			**Nov 15, 2021**	**Nov 17, 2021**	**Nov 15, 2021**	**Nov 16, 2021**
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	41	64	42	65
D7-N-MeFOSE (surr.)	1	%	46	58	56	69
D9-N-EtFOSE (surr.)	1	%	40	53	50	61
D5-N-EtFOSAA (surr.)	1	%	49	67	67	85
D3-N-MeFOSAA (surr.)	1	%	53	69	66	87
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.04	0.02	0.03	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.03	< 0.01	0.02	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.03	0.01	0.05	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.22	0.10	0.73	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	0.01	< 0.01	0.03	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	0.84	0.29	1.1	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	99	110	109	110
18O2-PFHxS (surr.)	1	%	96	91	77	90
13C8-PFOS (surr.)	1	%	77	88	84	92
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	140	153	122	133
13C2-6:2 FTSA (surr.)	1	%	161	186	153	157
13C2-8:2 FTSA (surr.)	1	%	140	168	158	169
13C2-10:2 FTSA (surr.)	1	%	48	57	53	70
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	1.06	0.39	1.83	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.89	0.31	1.14	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	1.11	0.41	1.87	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	1.43	0.51	2.12	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	1.51	0.52	2.22	< 0.1

Client Sample ID			0445_QC210_211117	0445_QC211_211117	0445_QC212_211117
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**M21-No48246**	**M21-No48247**	**M21-No48248**
Date Sampled			**Nov 17, 2021**	**Nov 17, 2021**	**Nov 17, 2021**
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.10	0.23	0.06
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.11	0.32	0.06
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.21	0.53	0.45
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.05	0.12	0.04
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	0.11	0.35	0.11

Client Sample ID			0445_QC210_211117	0445_QC211_211117	0445_QC212_211117
Sample Matrix			Water	Water	Water
Eurofins Sample No.			M21-No48246	M21-No48247	M21-No48248
Date Sampled			Nov 17, 2021	Nov 17, 2021	Nov 17, 2021
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.02	0.18	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	101	96	91
13C5-PFPeA (surr.)	1	%	110	96	95
13C5-PFHxA (surr.)	1	%	110	104	97
13C4-PFHpA (surr.)	1	%	111	108	102
13C8-PFOA (surr.)	1	%	118	113	113
13C5-PFNA (surr.)	1	%	108	106	106
13C6-PFDA (surr.)	1	%	69	73	67
13C2-PFUnDA (surr.)	1	%	56	62	53
13C2-PFDoDA (surr.)	1	%	57	67	55
13C2-PFTeDA (surr.)	1	%	30	41	32
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	94	105	112
D3-N-MeFOSA (surr.)	1	%	49	71	64
D5-N-EtFOSA (surr.)	1	%	45	65	56
D7-N-MeFOSE (surr.)	1	%	48	62	55
D9-N-EtFOSE (surr.)	1	%	47	56	49
D5-N-EtFOSAA (surr.)	1	%	54	86	82
D3-N-MeFOSAA (surr.)	1	%	51	76	87
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.05	0.08	0.18
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	0.02	0.02	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.04	0.04	0.05
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.06	0.08	0.26
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	1.0	[N09]1.6	[N09]2.8
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	0.05	0.08	0.13
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]2.6	[N09]4.5	[N09]7.5
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	101	102	101
18O2-PFHxS (surr.)	1	%	83	97	89
13C8-PFOS (surr.)	1	%	79	90	68

Client Sample ID			0445_QC210_211117	0445_QC211_211117	0445_QC212_211117
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**M21-No48246**	**M21-No48247**	**M21-No48248**
Date Sampled			**Nov 17, 2021**	**Nov 17, 2021**	**Nov 17, 2021**
Test/Reference	LOR	Unit			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	151	162	105
13C2-6:2 FTSA (surr.)	1	%	177	160	143
13C2-8:2 FTSA (surr.)	1	%	151	148	140
13C2-10:2 FTSA (surr.)	1	%	68	58	54
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	3.6	6.1	10.3
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	2.71	4.85	7.61
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	3.71	6.45	10.41
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	4.23	7.73	11.2
Sum of PFASs (n=30)*	0.1	ug/L	4.43	8.14	11.64

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Nov 22, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Nov 22, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Nov 22, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Nov 22, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Nov 20, 2021	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name:
Project ID: DEF19008

Order No.:
Report #: 842787
Phone: 8415 7777
Fax: 8415 7788

Received: Nov 19, 2021 5:50 PM
Due: Nov 29, 2021
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794						
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC206_211115	Nov 15, 2021		Water	M21-No48242	X
2	0445_QC207_211117	Nov 17, 2021		Water	M21-No48243	X
3	0445_QC208_211115	Nov 15, 2021		Water	M21-No48244	X
4	0445_QC209_211116	Nov 16, 2021		Water	M21-No48245	X
5	0445_QC210_211117	Nov 17, 2021		Water	M21-No48246	X
6	0445_QC211_	Nov 17, 2021		Water	M21-No48247	X

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name:
Project ID: DEF19008

Order No.:
Report #: 842787
Phone: 8415 7777
Fax: 8415 7788

Received: Nov 19, 2021 5:50 PM
Due: Nov 29, 2021
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794						
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
	211117					
7	0445_QC212_211117	Nov 17, 2021		Water	M21-No48248	X
Test Counts						7

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	106			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	90			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	96			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	94			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	107			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	102			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	106			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	102			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	105			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	149			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	88			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	106			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	90			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	100			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	107			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	101			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	88			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	89			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	109			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	98			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	65			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	137			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	102			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M21-No48243	CP	%	110			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M21-No48243	CP	%	76			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M21-No48243	CP	%	90			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M21-No48243	CP	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M21-No48243	CP	%	103			50-150	Pass	
Perfluorononanoic acid (PFNA)	M21-No48243	CP	%	105			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M21-No48243	CP	%	97			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M21-No48243	CP	%	108			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M21-No48243	CP	%	110			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M21-No48243	CP	%	109			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M21-No48243	CP	%	94			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M21-No48243	CP	%	112			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M21-No48243	CP	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M21-No48243	CP	%	107			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M21-No48243	CP	%	115			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M21-No48243	CP	%	110			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M21-No48243	CP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M21-No48243	CP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M21-No48243	CP	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M21-No48243	CP	%	98			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M21-No48243	CP	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M21-No48243	CP	%	84			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M21-No48243	CP	%	104			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M21-No48243	CP	%	145			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M21-No48243	CP	%	51			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M21-No48243	CP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M21-No48243	CP	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M21-No48243	CP	%	125			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M21-No48243	CP	%	95			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	N21-No37884	NCP	ug/L	0.02	0.02	18	30%	Pass	
Perfluorohexanoic acid (PFHxA)	N21-No37884	NCP	ug/L	0.06	0.05	16	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	N21-No37884	NCP	ug/L	0.02	0.02	15	30%	Pass	
Perfluorononanoic acid (PFNA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	N21-No37884	NCP	ug/L	0.02	0.02	8.0	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	N21-No37884	NCP	ug/L	0.02	0.02	10	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	N21-No37884	NCP	ug/L	0.33	0.30	11	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	N21-No37884	NCP	ug/L	0.02	0.03	15	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	N21-No37884	NCP	ug/L	1.0	1.0	4.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	N21-No37884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	N21-No37884	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS (VIC)

[redacted]
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name:
Project ID: DEF19008

Order No.:
Report #: 842787
Phone: 8415 7777
Fax: 8415 7788

Received: Nov 19, 2021 5:50 PM
Due: Nov 29, 2021
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794						
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC206_211115	Nov 15, 2021		Water	M21-No48242	X
2	0445_QC207_211117	Nov 17, 2021		Water	M21-No48243	X
3	0445_QC208_211115	Nov 15, 2021		Water	M21-No48244	X
4	0445_QC209_211116	Nov 16, 2021		Water	M21-No48245	X
5	0445_QC210_211117	Nov 17, 2021		Water	M21-No48246	X
6	0445_QC211_	Nov 17, 2021		Water	M21-No48247	X

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name:
Project ID: DEF19008

Order No.:
Report #: 842787
Phone: 8415 7777
Fax: 8415 7788

Received: Nov 19, 2021 5:50 PM
Due: Nov 29, 2021
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794						
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
	211117					
7	0445_QC212_211117	Nov 17, 2021		Water	M21-No48248	X
Test Counts						7

eurofins | Environment Testing

www.eurofins.com.au [redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +[redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +[redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +[redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +[redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Sample Receipt Advice

Company name:	Cardno Victoria Pty Ltd
Contact name:	[redacted]
Project name:	Not provided
Project ID:	DEF19008
Turnaround time:	5 Day
Date/Time received	Nov 19, 2021 5:50 PM
Eurofins reference	842787

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] **on phone :** [redacted] **or by email:** [redacted]

Results will be delivered electronically via email to [redacted]

Note: A copy of these results will also be delivered to the general Cardno Victoria Pty Ltd email address.

Global Leader - Results you can trust

Cardno

PLS FWD TO EUROFINS- DANDENONG

23

Chain of Custody

Sheet 1 of 1

PM Name: [redacted]

Phone: [redacted] Mobile:

Address: [redacted]

PM Email: [redacted]

Project Number: DEF190008

Laboratory (name, phone,fax no & contact person): EUROFINS

1625 FD

Carrier:

Received 18/11

C/note:

Temp: 3.2 C Seal: Y N

Ice / Ice brick

Sample ID	Laboratory ID	Container	Sampling Date	Sampling Time	Sample Matrix: Water	Sample Matrix: Soil	Sample preservation: Ice	Analysis: PFAS (28 analyte suite)	Analysis: HOLD
0445_QC206_211115		2x20mL (PFAS)	15.11.21		X		X	X	
0445_QC207_211117			17.11.21		X		X	X	
0445_QC208_211115			15.11.21		X		X	X	
0445_QC209_211116			16.11.21		X		X	X	
0445_QC210_211117			17.11.21		X		X	X	
0445_QC211_211117			17.11.21		X		X	X	
0445_QC212_211117		↓	17.11.21		X		X	X	

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples. [redacted] Date: 17.11.21

Relinquished by (Sampler): (print and signature)	Date	Time	Received by: (print and signature)	Date	Time
[redacted]	17.11.21		[redacted]	19/11	5:50 PM
[redacted] (ALS)	19/11		[redacted]		
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time

ICE 8.5 · 5 / 9

Revision 2
Approved 2 December 2016

5 DAY TAT

84278?

Cardno Victoria Pty Ltd
[redacted]

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **852797-W-V2**
Project name
Project ID DEF19008
Received Date Dec 23, 2021

Client Sample ID			**0445_QC200_211222**	**0445_QC201_211222**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**M21-De55389**	**M21-De55390**
Date Sampled			**Dec 22, 2021**	**Dec 22, 2021**
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.20	4.5
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	[N09]0.30	[N09]16
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	[N09]1.4	[N09]39
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.09	[N09]9.5
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.32	[N09]8.9
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	0.15
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	123	89
13C5-PFPeA (surr.)	1	%	99	98
13C5-PFHxA (surr.)	1	%	90	84
13C4-PFHpA (surr.)	1	%	114	70
13C8-PFOA (surr.)	1	%	104	80
13C5-PFNA (surr.)	1	%	144	62
13C6-PFDA (surr.)	1	%	92	59
13C2-PFUnDA (surr.)	1	%	99	80
13C2-PFDoDA (surr.)	1	%	95	77
13C2-PFTeDA (surr.)	1	%	139	67
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	108	93
D3-N-MeFOSA (surr.)	1	%	46	83

Client Sample ID			0445_QC200_211222	0445_QC201_211222
Sample Matrix			Water	Water
Eurofins Sample No.			M21-De55389	M21-De55390
Date Sampled			Dec 22, 2021	Dec 22, 2021
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D5-N-EtFOSA (surr.)	1	%	48	78
D7-N-MeFOSE (surr.)	1	%	74	90
D9-N-EtFOSE (surr.)	1	%	76	90
D5-N-EtFOSAA (surr.)	1	%	103	73
D3-N-MeFOSAA (surr.)	1	%	132	77
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	1.1	68
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.46	45
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]1.0	[N09]74
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]6.8	[N09]390
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.41	[N09]27
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]5.8	[N09]66
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	97	84
18O2-PFHxS (surr.)	1	%	89	82
13C8-PFOS (surr.)	1	%	93	83
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	0.33
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	26
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	75	130
13C2-6:2 FTSA (surr.)	1	%	131	88
13C2-8:2 FTSA (surr.)	1	%	129	115
13C2-10:2 FTSA (surr.)	1	%	189	73
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	12.6	456
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	6.12	74.9
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	12.92	464.9
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	16.01	627.9
Sum of PFASs (n=30)*	0.1	ug/L	17.88	774.38

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Jan 05, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Jan 05, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Jan 05, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Jan 05, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Dec 23, 2021	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name:
Project ID: DEF19008

Order No.:
Report #: 852797
Phone: 8415 7777
Fax: 8415 7788

Received: Dec 23, 2021 9:19 AM
Due: Jan 10, 2022
Priority: 10 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794						
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC200_211222	Dec 22, 2021		Water	M21-De55389	X
2	0445_QC201_211222	Dec 22, 2021		Water	M21-De55390	X
Test Counts						2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	102			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	115			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	104			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	118			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	100			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	109			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	108			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	125			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	127			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	120			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	112			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	111			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	124			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	112			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	111			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	105			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	135			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	100			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	103			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	98			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	106			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	107			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	113			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	102			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	97			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	136			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	141			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	98			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M21-De52585	NCP	%	115			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M21-De52585	NCP	%	127			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M21-De52585	NCP	%	114			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M21-De52585	NCP	%	113			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M21-De52585	NCP	%	90			50-150	Pass	
Perfluorononanoic acid (PFNA)	M21-De52585	NCP	%	110			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M21-De52585	NCP	%	132			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M21-De52585	NCP	%	66			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M21-De52585	NCP	%	145			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M21-De52585	NCP	%	142			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M21-De52585	NCP	%	140			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M21-De52585	NCP	%	123			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M21-De52585	NCP	%	112			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M21-De52585	NCP	%	141			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M21-De52585	NCP	%	128			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M21-De52585	NCP	%	127			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M21-De52585	NCP	%	104			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M21-De52585	NCP	%	149			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M21-De52585	NCP	%	113			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M21-De52585	NCP	%	80			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M21-De52585	NCP	%	107			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M21-De52585	NCP	%	100			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M21-De52585	NCP	%	97			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M21-De52585	NCP	%	140			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S21-De48893	NCP	%	109			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M21-De52585	NCP	%	61			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M21-De52585	NCP	%	148			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M21-De52585	NCP	%	132			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M21-De52585	NCP	%	124			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M21-De52585	NCP	%	117			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M21-De50021	NCP	ug/L	0.04	0.04	13	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M21-De50021	NCP	ug/L	0.05	0.05	1.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M21-De50021	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M21-De50021	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

This report has been revised (V2) following repeat analysis. PFAS results for sample 0445_QC201_211222 have now been replaced by the repeat results.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager

[redacted] Senior Analyst-PFAS (VIC)

[redacted]

General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : [redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : [redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : [redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : [redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : [redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name:
Project ID: DEF19008

Order No.:
Report #: 852797
Phone: 8415 7777
Fax: 8415 7788

Received: Dec 23, 2021 9:19 AM
Due: Jan 10, 2022
Priority: 10 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794						
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC200_211222	Dec 22, 2021		Water	M21-De55389	X
2	0445_QC201_211222	Dec 22, 2021		Water	M21-De55390	X
Test Counts						2

eurofins | Environment Testing

www.eurofins.com.au [redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +[redacted]
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +[redacted]
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +[redacted]
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +[redacted]
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +[redacted]
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : [redacted]
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : [redacted]
IANZ # 1290

Sample Receipt Advice

Company name:	Cardno Victoria Pty Ltd
Contact name:	[redacted]
Project name:	Not provided
Project ID:	DEF19008
Turnaround time:	10 Day
Date/Time received	Dec 23, 2021 9:19 AM
Eurofins reference	852797

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] **on phone :** [redacted] **or by email:** [redacted]

Results will be delivered electronically via email to [redacted] - [redacted]

Note: A copy of these results will also be delivered to the general Cardno Victoria Pty Ltd email address.

Global Leader - Results you can trust

Cardno

Chain of Custody

Sheet 1 of 1

PM Name: [redacted]
Phone: [redacted]
Address: [redacted]
PM Email: [redacted]
Project Number: DEF19008
Laboratory (name, phone,fax no & contact person): EUROFINS

Sample ID	Laboratory ID	Container	Sampling Date	Sampling Time	Sample Matrix: Water	Soil	Sample preservation: Ice	Analysis: PFAS (28 Analyte Suite)
0445-QC200-211222		2x 20ml PFAS			X		X	X
0445-QC201-211222		2x 200 PFAS			X		X	X

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples.

Sampler name: (print and signature) [redacted] 22.12.21

Relinquished by (Sampler): (print and signature)	Date	Time	Received by (Courier/Lab): (print and signature)	Date	Time
[redacted]	23.12.21				
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time

23/12/21 9:11 am

Chilled: Yes No
Temp: 13.6 +0.5
(1 Bot.)
Correction:
Final Temp: 00

852797

APPENDIX

D

FIELD RECORDS & CALIBRATION CERTIFICATES

Location	Property	Easting	Northing	Monitoring Date	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Other Observations on Bore/Site	Temp (C^{o})	DO (mg/L)	EC (us/Cm)	pH	Eh (mV)
MW009	East BMA	495603.37	5999848.02	8/11/21	12.3	166.28	7.007	159.273	Clear, low turbidity	18.6	2.37	206.6	6.04	140.4
MW012	East BMA	495534.14	5999634.04	8/11/21	10.78	167.36	7.849	159.511	Clear, low turbidity	20.2	2.99	314.6	6.23	129.4
MW016	East BMA	495641.49	5999946.12	8/11/21	11.04	166.16	7.132	159.028	Clear, low turbidity	18.5	0.94	400.4	5.98	136
MW018	East BMA	495834.70	5999717.39	8/11/21	10.42	165.43	6.473	158.957	Clear, low turbidity	19.6	0.95	867	6.26	158.2
MW020	East BMA	495826.29	5999801.50	9/11/21	6.99	165.41	6.538	158.872	Low water volume, well bailed. Cloudy, brown, medium turbidity, slight organic odour	17.3	0.79	451	5.98	20
MW029	East BMA	495426.45	5999463.69	8/11/21	11.08	168.11	7.838	160.272	Cloudy, brown, medium turbidity	24	3.72	208	5.57	152.1
MW034	East BMA	495753.66	5999858.29	10/11/21	11.14	166.63	7.747	158.883	Clear, low turbidity, sleeve broken upon redeployment,new sleeve deployed	21.7	1.18	359.8	5.77	106.6
MW035	East BMA	495683.72	5999911.25	8/11/21	11.49	166.22	7.232	158.988	Clear, low turbidity, specks of organic matter	18.4	0.58	387.4	5.93	131.8
MW042	East BMA	495677.04	5999879.86	8/11/21	18	166.62	7.528	159.092	Clear, low turbidity	19.7	0.76	386.5	6.03	127.2
MW043	East BMA	495680.27	5999879.94	8/11/21	12.2	166.55	7.441	159.109	Clear, low turbidity	20.7	1.05	344.6	5.98	113.7
MW046_D	East BMA	495752.45	5999855.99	10/11/21	22.03	166.49	8.188	158.302	Clear, low turbidity	20.7	1.82	328.2	5.89	121.6
MW046_I	East BMA	495752.45	5999855.99	16/11/21	14.61	166.48	7.614	158.866	Clear, low turbidity	18.5	0.66	320.1	5.76	139.8
MW051	East BMA	492170.29	5999844.58	9/11/21	32.72	188.02	25.497	162.525	Clear, low turbidity	19.3	0.99	3663	6.19	149.6
MW052	Offsite	495251.08	5999549.74	8/11/21	11.34	168.49	7.777	160.713	Cloudy, yellow brown, medium turbidity with sediment and organic matter	17.5	0.59	126	5.63	-19.8
MW056	South BMA	492586.19	5999891.19	8/11/21	3.8	-	2.239	-	Cloudy, brown, medium turbidity	21.4	3.9	434.5	6.84	124.3
MW304	South BMA	491289.32	6000521.98	9/11/21	22.2	176.131	15.799	160.332	Clear, low turbidity	20.1	1.59	15525	6.52	131.2
MW307	South BMA	491307.09	6000261.17	9/11/21	27.77	181.086	19.829	161.257	Clear, low turbidity	21.3	1.76	5874	6.85	103
MW311	South BMA	491514.62	6000214.45	10/11/21	22.93	182.452	20.324	162.128	Clear, low turbidity	17.1	2.89	12127	6.3	221.9
MW312	Offsite	491682.00	6000520.00	9/11/21	17.79	175.841	11.407	164.434	Cloudy, light orange brown, medium turbidity	20.2	0.86	5156	6.92	89.4
MW313	South BMA	491109.26	5999857.37	10/11/21	35.05	193.128	30.202	162.926	Cloudy, minor orange tinge, low-medium turbidity	23.6	0.84	893	6.54	85.3
MW315	South BMA	491244.00	5999661.00	9/11/21	41.8	204.875	41.21	163.665	Low water volume, well bailed. Orange brown, medium turbidity, sediment in bailer	21.4	1.8	2079	6.65	133.2
MW317	South BMA	491231.00	5999650.00	9/11/21	39.5	204.364	Dry	-	Well Dry	-	-	-	-	-

Location	Property	Easting	Northing	Monitoring Date	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Other Observations on Bore/Site	Temp (C°)	DO (mg/L)	EC (us/Cm)	pH	Eh (mV)
MW318	South BMA	491261.00	5999655.00	8/11/21	41.21	205.965	Dry	-	Well Dry	-	-	-	-	-
MW319	South BMA	491998.00	5999572.00	9/11/21	42	199.524	35.300	164.224	Clear, low turbidity	21.2	1.52	1022	6.4	69.2
MW321	South BMA	492074.00	5999548.00	9/11/21	40	200.815	36.414	164.401	Clear, low turbidity	20.7	2.5	1254	6.4	58.6
MW323	South BMA	492076.00	6000078.00	9/11/21	23.36	184.472	19.468	165.004	Clear, low turbidity	20.6	2.99	6305	5.75	137.7
MW326	South BMA	492216.00	5999856.00	9/11/21	31.83	188.819	24.593	164.226	Clear, low turbidity	21.2	3.11	1426	6.55	87.4
MW329	North BMA	492199.00	6000242.00	9/11/21	20.05	181.435	14.909	166.526	Clear, low turbidity	19.7	4.67	2442	6.43	67.9
MW342	North BMA	493664.00	6000189.00	9/11/21	17.64	180.605	14.069	166.536	Clear, low turbidity	19.4	0.5	2934	7.06	76.4
MW345	North BMA	494560.00	5999979.00	9/11/21	5.4	168.316	5.001	163.315	Low water volume, well bailed. Orange brown, medium turbidity, sediment in bailer	17	0.8	10886	6.77	-38.4
MW346	East BMA	494621.00	6000250.00	9/11/21	9.8	166.944	2.873	164.071	Clear, low turbidity	19.9	1.92	2113	5.8	204.6
MW350_D	East BMA	495299.30	5999571.30	8/09/21	20	168.229	7.846	160.383	Clear, low turbidity, minor red sediment in water	21.8	2.05	288.7	0.271	193.7
MW350_S	East BMA	495299.30	5999571.30	8/09/21	10.2	168.233	7.892	160.341	Clear, low turbidity	21.2	4.12	381.6	5.73	193.4
MW351	East BMA	495382.00	6000184.00	10/09/21	8.84	164.79	5.416	159.374	Clear, low turbidity, minor dark brown sediment in water	17.3	0.49	138.2	5.78	114.4
MW352	Offsite	495498.59	6000070.77	10/09/21	9.82	164.493	5.341	159.152	Cloudy, orange brown, medium turbidity	18.4	0.58	190.9	6.06	129.2
MW353	East BMA	495479.00	5999808.00	8/09/21	7.835	166.625	7.167	159.458	Low water volume, well bailed. Cloudy, orange brown, medium turbidity	21.3	1.49	582	6.2	153.3
MW354	East BMA	495767.20	5999625.80	8/09/21	11.13	166.142	6.917	159.225	Clear, low turbidity	19.5	1.54	531.6	5.77	172.5
MW356	Offsite	496059.80	6000518.40	11/11/21	3.7	156.882	1.398	155.484	Cloudy, orange brown, medium turbidity.	19.5	0.72	528.5	6.07	166.9
MW357	Offsite	495793.41	6001682.22	11/11/21	6	156.243	2.595	153.648	Cloudy, brown, medium turbidity	16.2	2.97	202.1	6.4	3.8
MW360	Offsite	490936.64	6001498.75	9/11/21	12.9	164.89	8.25	156.640	Clear, low turbidity	20.2	0.41	1821	7.24	133.9
MW361	Offsite	490943.84	6003056.80	9/11/21	6.66	153.716	2.305	151.411	Cloudy, brown, medium turbidity with red algae present	23.4	0.86	470.8	6.29	45.5
MW403	Offsite	495312.20	5999591.49	8/11/21	10	166.926	6.624	160.302	Clear, low turbidity with small red specks	22.5	2.7	306.7	5.88	147.6
MW404	Offsite	495269.66	5999632.70	8/11/21	10.185	166.617	6.551	160.066	Clear, low turbidity	22.1	0.74	426.7	5.51	161
OTH019	Offsite	-	-	15/11/21	-	-	-	-	Unable to gauge well due to pump present in bore. Sampled from tap located approximately 10 m from the well, Clear, low turbidity	15.2	1.5	392.6	6.1	174.3

Location ID	Property	Easting	Northing	Monitoring Date	Water body depth (m)	Sample Depth (m)	Flow Rate	Water Colour	Turbidity	Other Observations	Temp (Co)	DO (mg/L)	EC (us/Cm)	pH	Eh (mV)
SW302	On-base	491217.00	5999668.00	9/11/2021	-	-	-	-	-	Dry	-	-	-	-	-
SW307	On-base	491296.00	5999663.00	17/11/2021	0.2	0.1	Low	Brown	High		16.5	5.97	65.4	6.58	130.4
SW310	On-base	491245.00	6000071.00	16/11/2021	0.1	0.05	Low	Cloudy	Low		13.1	5.31	140.1	6.83	121.2
SW311	On-base	491280.00	6000430.00	17/11/2021	0.05	0.05	Low	Cloudy	Medium	Brown sediment	15.2	6.05	205.3	7.04	93.1
SW313	On-base	491321.00	6000251.00	17/11/2021	0.3	0.1	Low	Cloudy	Low		15	4.21	317	6.63	87.5
SW316	On-base	491421.00	6000456.00	16/11/2021	0.2	0.1	Low	Cloudy	Medium		12.4	7	109.2	6.65	107.3
SW321	On-base	491612.00	6000381.00	16/11/2021	0.2	0.1	Medium	Clear	Low		14.1	6.91	170.9	7.14	101.7
SW322	On-base	491706.00	6000527.00	17/11/2021	0.3	0.2	Medium	Cloudy	Low		17.3	5.88	157.5	7.12	89.7
SW323	On-base	491860.00	6000478.00	17/11/2021	1	0.2	Low	Cloudy	Medium	Minor plastic debris	21.1	5.25	66.5	6.5	122
SW324	On-base	491976.00	6000279.00	16/11/2021	0.1	0.05	Low	Cloudy	Medium		13.1	6.18	142.5	6.4	98.9
SW326	On-base	491968.00	5999998.00	17/11/2021	0.2	0.1	Low	Cloudy	Low		18.1	4.9	404.8	7.27	181
SW332	On-base	492126.00	6000156.00	17/11/2021	0.15	0.1	Low	Cloudy	Low		15.6	6.74	108	5.6	159.3
SW333	On-base	492177.00	6000246.00	17/11/2021	0.5	0.2	Low	Cloudy	Medium		19.6	4.2	102.3	6.14	145.4
SW336	On-base	492186.00	5999832.00	15/11/2021	0.5	0.2	Low	Green	Medium	Algae present	20.2	6.71	117.9	5.28	194.4
SW338	On-base	492273.00	6000114.00	9/11/2021	0.5	0.2	Low	Cloudy	Medium		23	6.29	718	8.96	-37.9
SW340	On-base	492352.00	6000181.00	15/11/2021	0.2	0.1	Medium	Brown	Medium	Organic and plastic debris in water	15.8	6.29	142.2	6.67	154
SW346	On-base	492606.00	6000048.00	17/11/2021	1	0.2	Low	Cloudy	Medium		22.2	4.95	64	6.78	109.4
SW349	On-base	492827.00	5999999.00	15/11/2021	1	0.2	Low	Brown	Low		18.3	2.9	77.5	6.41	96.3
SW355	On-base	492997.00	5999947.00	15/11/2021	1	0.2	Medium	Yellow	Medium		17.7	6.32	55.9	6.57	175.2
SW370	On-base	494029.00	5999774.00	17/11/2021	1	0.2	Low	Cloudy	Medium		17.9	5.9	100.9	7	107.3
SW374	On-base	494552.00	6000001.00	17/11/2021	0.3	0.1	Medium				17	8.08	258.6	7.56	14
SW375	On-base	494650.00	6000239.00	17/11/2021	1	0.2	High	Clear	Low		16.9	4.2	114.2	6.33	167.5
SW379	On-base	495222.00	5999565.00	17/11/2021	0.1	0.05	Low	Cloudy	Medium		16.4	4.69	113.8	6.85	56.4
SW380	On-base	495340.00	5999652.00	8/11/2021	0.05	0.01	Low	Clear	Low		23.2		204.7	7.63	130.6
SW382	On-base	495424.00	6000092.00	17/11/2021	1	0.2	Low	Cloudy	Low		20.1	6.41	15.6	6.41	119.3
SW387	On-base	496084.00	5999677.00	17/11/2021	0.5	0.2	Low	Clear	Low	Thin foam layer on water	15.9	6.39	356.5	6.81	132.9
SW388	On-base	496272.00	5999749.00	17/11/2021	0.3	0.2	Low	Cloudy	Low	Surrounded by overgrown blackberries (Blackberry spraying signs present)	18.6	7.01	180.9	6.52	138.6
SW390	Off-base	497942.00	5998177.00	9/11/2021	1	0.2	High	Clear	Low		21.9	5.05	70.3	6.76	138.1
SW393	Off-base	496236.00	5999368.00	16/11/2021	1	0.1	High	Brown	Low		19.6	6	198	7.48	163.4
SW395	Off-base	496191.00	5999895.00	17/11/2021	1	0.2	Low	Cloudy	Low		15.9	6.54	253.7	7.1	117.3
SW396	Off-base	-	-	17/11/2021	0.5	0.2	Low	Yellow	Medium		19.3	5.51	544.2	7.14	148.1
SW397	Off-base	-	-	17/11/2021	0.5	0.2	Low	Cloudy	Medium		17.8	6.12	408.5	7.52	167.5
SW398	Off-base	496369.00	6000178.00	16/11/2021	1	0.2	High	Clear	Low		15.4	1.99	171.1	6.5	126.6
SW400	Off-base	-	-	17/11/2021	1	0.2	Low	Cloudy	Low		14.3	6.41	257.5	7.06	141.6
SW401	Off-base	-	-	15/11/2021	0.3	0.1	Low	Cloudy	Medium		19.8	6.2	220	6.41	162.5
SW403	Off-base	495794.00	6000721.00	12/11/2021	0.3	0.1	High	Cloudy	Medium		17.4	6	81.3	6.76	49.7
SW404	Off-base	495932.00	6000777.00	15/11/2021	1	0.2	High	Cloudy	Low		15.2	2.47	185.1	6.6	123.6
SW405	Off-base	495713.70	6000917.23	15/11/2021	0.7	0.2	Low	Yellow	Medium		16.1	3.89	278.3	7.15	113
SW409	Off-base	495342.00	6000744.00	12/11/2021	1	0.2	High	Yellow	Medium		16.2	4.56	46	6.5	110.1
SW412	Off-base	495462.23	6001117.47	12/11/2021	0.5	0.2	High	Cloudy	Medium		16.6	5.37	53	6.49	116.5
SW416	Off-base	495852.00	6001776.00	10/11/2021	0.5	0.2	Low	Clear	Low		15.3	6.6	52	7.99	18.9
SW424	Off-base	491511.00	6000639.00	15/11/2021	0.2	0.1	High	Cloudy	Low		16.4	5.9	117.4	6.76	145.9
SW427	Off-base	490948.72	6001301.83	15/11/2021	0.4	0.2	Medium	Cloudy	Low		15.3	8.43	129	7.21	142.9
SW430	Off-base	490913.00	6002786.00	15/11/2021	0.4	0.2	Low	Brown	High	Brown, plastic and organic debris	15.8	6.29	142.2	6.67	154
SW431	Off-base	490883.28	6003648.07	17/11/2021	0.5	0.2	Low	Cloudy	Medium	Faint shean to water, surrounded by blackberries	19.3	5.52	154.2	6.78	2.4
SW432	Off-base	490789.00	6003749.00	17/11/2021	0.5	0.2	High	Cloudy	Low		16.9	4.95	131.3	7.05	79.3
SW434	Off-base	490476.00	6003891.00	15/11/2021	0.4	0.2	Low	Clear	Low		16	7.74	122	7.31	194
SW448	On-base	491960.62	5999684.39	15/11/2021	0.5	0.2	Medium	Cloudy	Low		16.2	7.95	74.3	6.93	150.7
SW462	Off-base	495777.32	6001658.16	10/11/2021	1	0.2	High	Clear	Low		14.7	2.29	369	7.73	33
SW463	Off-base	491216.27	6000546.54	15/11/2021	0.5	0.2	Low	Cloudy	Low		16.7	6.69	44.9	6.44	148.7
SW470	Off-base	496154.23	6000093.25	16/11/2021	0.4	0.1	Low	Brown	Low		23.1	4.82	124	6.63	197.3
SW471	Off-base	495945.94	6000282.56	15/11/2021	0.3	0.1	Low	Cloudy	Low		21	5.42	263.8	7.63	141.4
SW487	Off-base	495826.91	6000046.42	16/01/1900	0.4	0.1	Low	Cloudy	Medium		15.7	6.57	406.4	7.47	166.4

Location	Property	Easting	Northing	Monitoring Date	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Other Observations on Bore/Site	Temp (C^{o})	DO (mg/L)	EC (us/Cm)	pH	Eh (mV)
MW009	East BMA	495603.37	5999848.02	8/11/21	12.3	166.28	7.007	159.273	Clear, low turbidity	18.6	2.37	206.6	6.04	140.4
MW012	East BMA	495534.14	5999634.04	8/11/21	10.78	167.36	7.849	159.511	Clear, low turbidity	20.2	2.99	314.6	6.23	129.4
MW016	East BMA	495641.49	5999946.12	8/11/21	11.04	166.16	7.132	159.028	Clear, low turbidity	18.5	0.94	400.4	5.98	136
MW018	East BMA	495834.70	5999717.39	8/11/21	10.42	165.43	6.473	158.957	Clear, low turbidity	19.6	0.95	867	6.26	158.2
MW020	East BMA	495826.29	5999801.50	9/11/21	6.99	165.41	6.538	158.872	Low water volume, well bailed. Cloudy, brown, medium turbidity, slight organic odour	17.3	0.79	451	5.98	20
MW029	East BMA	495426.45	5999463.69	8/11/21	11.08	168.11	7.838	160.272	Cloudy, brown, medium turbidity	24	3.72	208	5.57	152.1
MW034	East BMA	495753.66	5999858.29	10/11/21	11.14	166.63	7.747	158.883	Clear, low turbidity, sleeve broken upon redeployment,new sleeve deployed	21.7	1.18	359.8	5.77	106.6
MW035	East BMA	495683.72	5999911.25	8/11/21	11.49	166.22	7.232	158.988	Clear, low turbidity, specks of organic matter	18.4	0.58	387.4	5.93	131.8
MW042	East BMA	495677.04	5999879.86	8/11/21	18	166.62	7.528	159.092	Clear, low turbidity	19.7	0.76	386.5	6.03	127.2
MW043	East BMA	495680.27	5999879.94	8/11/21	12.2	166.55	7.441	159.109	Clear, low turbidity	20.7	1.05	344.6	5.98	113.7
MW046_D	East BMA	495752.45	5999855.99	10/11/21	22.03	166.49	8.188	158.302	Clear, low turbidity	20.7	1.82	328.2	5.89	121.6
MW046_I	East BMA	495752.45	5999855.99	16/11/21	14.61	166.48	7.614	158.866	Clear, low turbidity	18.5	0.66	320.1	5.76	139.8
MW051	East BMA	492170.29	5999844.58	9/11/21	32.72	188.02	25.497	162.525	Clear, low turbidity	19.3	0.99	3663	6.19	149.6
MW052	Offsite	495251.08	5999549.74	8/11/21	11.34	168.49	7.777	160.713	Cloudy, yellow brown, medium turbidity with sediment and organic matter	17.5	0.59	126	5.63	-19.8
MW056	South BMA	492586.19	5999891.19	8/11/21	3.8	-	2.239	-	Cloudy, brown, medium turbidity	21.4	3.9	434.5	6.84	124.3
MW304	South BMA	491289.32	6000521.98	9/11/21	22.2	176.131	15.799	160.332	Clear, low turbidity	20.1	1.59	15525	6.52	131.2
MW307	South BMA	491307.09	6000261.17	9/11/21	27.77	181.086	19.829	161.257	Clear, low turbidity	21.3	1.76	5874	6.85	103
MW311	South BMA	491514.62	6000214.45	10/11/21	22.93	182.452	20.324	162.128	Clear, low turbidity	17.1	2.89	12127	6.3	221.9
MW312	Offsite	491682.00	6000520.00	9/11/21	17.79	175.841	11.407	164.434	Cloudy, light orange brown, medium turbidity	20.2	0.86	5156	6.92	89.4
MW313	South BMA	491109.26	5999857.37	10/11/21	35.05	193.128	30.202	162.926	Cloudy, minor orange tinge, low-medium turbidity	23.6	0.84	893	6.54	85.3
MW315	South BMA	491244.00	5999661.00	9/11/21	41.8	204.875	41.21	163.665	Low water volume, well bailed. Orange brown, medium turbidity, sediment in bailer	21.4	1.8	2079	6.65	133.2
MW317	South BMA	491231.00	5999650.00	9/11/21	39.5	204.364	Dry	-	Well Dry	-	-	-	-	-

Location	Property	Easting	Northing	Monitoring Date	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Other Observations on Bore/Site	Temp (C°)	DO (mg/L)	EC (us/Cm)	pH	Eh (mV)
MW318	South BMA	491261.00	5999655.00	8/11/21	41.21	205.965	Dry	-	Well Dry	-	-	-	-	-
MW319	South BMA	491998.00	5999572.00	9/11/21	42	199.524	35.300	164.224	Clear, low turbidity	21.2	1.52	1022	6.4	69.2
MW321	South BMA	492074.00	5999548.00	9/11/21	40	200.815	36.414	164.401	Clear, low turbidity	20.7	2.5	1254	6.4	58.6
MW323	South BMA	492076.00	6000078.00	9/11/21	23.36	184.472	19.468	165.004	Clear, low turbidity	20.6	2.99	6305	5.75	137.7
MW326	South BMA	492216.00	5999856.00	9/11/21	31.83	188.819	24.593	164.226	Clear, low turbidity	21.2	3.11	1426	6.55	87.4
MW329	North BMA	492199.00	6000242.00	9/11/21	20.05	181.435	14.909	166.526	Clear, low turbidity	19.7	4.67	2442	6.43	67.9
MW342	North BMA	493664.00	6000189.00	9/11/21	17.64	180.605	14.069	166.536	Clear, low turbidity	19.4	0.5	2934	7.06	76.4
MW345	North BMA	494560.00	5999979.00	9/11/21	5.4	168.316	5.001	163.315	Low water volume, well bailed. Orange brown, medium turbidity, sediment in bailer	17	0.8	10886	6.77	-38.4
MW346	East BMA	494621.00	6000250.00	9/11/21	9.8	166.944	2.873	164.071	Clear, low turbidity	19.9	1.92	2113	5.8	204.6
MW350_D	East BMA	495299.30	5999571.30	8/09/21	20	168.229	7.846	160.383	Clear, low turbidity, minor red sediment in water	21.8	2.05	288.7	0.271	193.7
MW350_S	East BMA	495299.30	5999571.30	8/09/21	10.2	168.233	7.892	160.341	Clear, low turbidity	21.2	4.12	381.6	5.73	193.4
MW351	East BMA	495382.00	6000184.00	10/09/21	8.84	164.79	5.416	159.374	Clear, low turbidity, minor dark brown sediment in water	17.3	0.49	138.2	5.78	114.4
MW352	Offsite	495498.59	6000070.77	10/09/21	9.82	164.493	5.341	159.152	Cloudy, orange brown, medium turbidity	18.4	0.58	190.9	6.06	129.2
MW353	East BMA	495479.00	5999808.00	8/09/21	7.835	166.625	7.167	159.458	Low water volume, well bailed. Cloudy, orange brown, medium turbidity	21.3	1.49	582	6.2	153.3
MW354	East BMA	495767.20	5999625.80	8/09/21	11.13	166.142	6.917	159.225	Clear, low turbidity	19.5	1.54	531.6	5.77	172.5
MW356	Offsite	496059.80	6000518.40	11/11/21	3.7	156.882	1.398	155.484	Cloudy, orange brown, medium turbidity.	19.5	0.72	528.5	6.07	166.9
MW357	Offsite	495793.41	6001682.22	11/11/21	6	156.243	2.595	153.648	Cloudy, brown, medium turbidity	16.2	2.97	202.1	6.4	3.8
MW360	Offsite	490936.64	6001498.75	9/11/21	12.9	164.89	8.25	156.640	Clear, low turbidity	20.2	0.41	1821	7.24	133.9
MW361	Offsite	490943.84	6003056.80	9/11/21	6.66	153.716	2.305	151.411	Cloudy, brown, medium turbidity with red algae present	23.4	0.86	470.8	6.29	45.5
MW403	Offsite	495312.20	5999591.49	8/11/21	10	166.926	6.624	160.302	Clear, low turbidity with small red specks	22.5	2.7	306.7	5.88	147.6
MW404	Offsite	495269.66	5999632.70	8/11/21	10.185	166.617	6.551	160.066	Clear, low turbidity	22.1	0.74	426.7	5.51	161
OTH019	Offsite	-	-	15/11/21	-	-	-	-	Unable to gauge well due to pump present in bore. Sampled from tap located approximately 10 m from the well, Clear, low turbidity	15.2	1.5	392.6	6.1	174.3

Location ID	Property	Easting	Northing	Monitoring Date	Water body depth (m)	Sample Depth (m)	Flow Rate	Water Colour	Turbidity	Other Observations	Temp (Co)	DO (mg/L)	EC (us/Cm)	pH	Eh (mV)
SW302	On-base	491217.00	5999668.00	9/11/2021	-	-	-	-	-	Dry	-	-	-	-	-
SW307	On-base	491296.00	5999663.00	17/11/2021	0.2	0.1	Low	Brown	High		16.5	5.97	65.4	6.58	130.4
SW310	On-base	491245.00	6000071.00	16/11/2021	0.1	0.05	Low	Cloudy	Low		13.1	5.31	140.1	6.83	121.2
SW311	On-base	491280.00	6000430.00	17/11/2021	0.05	0.05	Low	Cloudy	Medium	Brown sediment	15.2	6.05	205.3	7.04	93.1
SW313	On-base	491321.00	6000251.00	17/11/2021	0.3	0.1	Low	Cloudy	Low		15	4.21	317	6.63	87.5
SW316	On-base	491421.00	6000456.00	16/11/2021	0.2	0.1	Low	Cloudy	Medium		12.4	7	109.2	6.65	107.3
SW321	On-base	491612.00	6000381.00	16/11/2021	0.2	0.1	Medium	Clear	Low		14.1	6.91	170.9	7.14	101.7
SW322	On-base	491706.00	6000527.00	17/11/2021	0.3	0.2	Medium	Cloudy	Low		17.3	5.88	157.5	7.12	89.7
SW323	On-base	491860.00	6000478.00	17/11/2021	1	0.2	Low	Cloudy	Medium	Minor plastic debris	21.1	5.25	66.5	6.5	122
SW324	On-base	491976.00	6000279.00	16/11/2021	0.1	0.05	Low	Cloudy	Medium		13.1	6.18	142.5	6.4	98.9
SW326	On-base	491968.00	5999998.00	17/11/2021	0.2	0.1	Low	Cloudy	Low		18.1	4.9	404.8	7.27	181
SW332	On-base	492126.00	6000156.00	17/11/2021	0.15	0.1	Low	Cloudy	Low		15.6	6.74	108	5.6	159.3
SW333	On-base	492177.00	6000246.00	17/11/2021	0.5	0.2	Low	Cloudy	Medium		19.6	4.2	102.3	6.14	145.4
SW336	On-base	492186.00	5999832.00	15/11/2021	0.5	0.2	Low	Green	Medium	Algae present	20.2	6.71	117.9	5.28	194.4
SW338	On-base	492273.00	6000114.00	9/11/2021	0.5	0.2	Low	Cloudy	Medium		23	6.29	718	8.96	-37.9
SW340	On-base	492352.00	6000181.00	15/11/2021	0.2	0.1	Medium	Brown	Medium	Organic and plastic debris in water	15.8	6.29	142.2	6.67	154
SW346	On-base	492606.00	6000048.00	17/11/2021	1	0.2	Low	Cloudy	Medium		22.2	4.95	64	6.78	109.4
SW349	On-base	492827.00	5999999.00	15/11/2021	1	0.2	Low	Brown	Low		18.3	2.9	77.5	6.41	96.3
SW355	On-base	492997.00	5999947.00	15/11/2021	1	0.2	Medium	Yellow	Medium		17.7	6.32	55.9	6.57	175.2
SW370	On-base	494029.00	5999774.00	17/11/2021	1	0.2	Low	Cloudy	Medium		17.9	5.9	100.9	7	107.3
SW374	On-base	494552.00	6000001.00	17/11/2021	0.3	0.1	Medium				17	8.08	258.6	7.56	14
SW375	On-base	494650.00	6000239.00	17/11/2021	1	0.2	High	Clear	Low		16.9	4.2	114.2	6.33	167.5
SW379	On-base	495222.00	5999565.00	17/11/2021	0.1	0.05	Low	Cloudy	Medium		16.4	4.69	113.8	6.85	56.4
SW380	On-base	495340.00	5999652.00	8/11/2021	0.05	0.01	Low	Clear	Low		23.2		204.7	7.63	130.6
SW382	On-base	495424.00	6000092.00	17/11/2021	1	0.2	Low	Cloudy	Low		20.1	6.41	15.6	6.41	119.3
SW387	On-base	496084.00	5999677.00	17/11/2021	0.5	0.2	Low	Clear	Low	Thin foam layer on water	15.9	6.39	356.5	6.81	132.9
SW388	On-base	496272.00	5999749.00	17/11/2021	0.3	0.2	Low	Cloudy	Low	Surrounded by overgrown blackberries (Blackberry spraying signs present)	18.6	7.01	180.9	6.52	138.6
SW390	Off-base	497942.00	5998177.00	9/11/2021	1	0.2	High	Clear	Low		21.9	5.05	70.3	6.76	138.1
SW393	Off-base	496236.00	5999368.00	16/11/2021	1	0.1	High	Brown	Low		19.6	6	198	7.48	163.4
SW395	Off-base	496191.00	5999895.00	17/11/2021	1	0.2	Low	Cloudy	Low		15.9	6.54	253.7	7.1	117.3
SW396	Off-base	-	-	17/11/2021	0.5	0.2	Low	Yellow	Medium		19.3	5.51	544.2	7.14	148.1
SW397	Off-base	-	-	17/11/2021	0.5	0.2	Low	Cloudy	Medium		17.8	6.12	408.5	7.52	167.5
SW398	Off-base	496369.00	6000178.00	16/11/2021	1	0.2	High	Clear	Low		15.4	1.99	171.1	6.5	126.6
SW400	Off-base	-	-	17/11/2021	1	0.2	Low	Cloudy	Low		14.3	6.41	257.5	7.06	141.6
SW401	Off-base	-	-	15/11/2021	0.3	0.1	Low	Cloudy	Medium		19.8	6.2	220	6.41	162.5
SW403	Off-base	495794.00	6000721.00	12/11/2021	0.3	0.1	High	Cloudy	Medium		17.4	6	81.3	6.76	49.7
SW404	Off-base	495932.00	6000777.00	15/11/2021	1	0.2	High	Cloudy	Low		15.2	2.47	185.1	6.6	123.6
SW405	Off-base	495713.70	6000917.23	15/11/2021	0.7	0.2	Low	Yellow	Medium		16.1	3.89	278.3	7.15	113
SW409	Off-base	495342.00	6000744.00	12/11/2021	1	0.2	High	Yellow	Medium		16.2	4.56	46	6.5	110.1
SW412	Off-base	495462.23	6001117.47	12/11/2021	0.5	0.2	High	Cloudy	Medium		16.6	5.37	53	6.49	116.5
SW416	Off-base	495852.00	6001776.00	10/11/2021	0.5	0.2	Low	Clear	Low		15.3	6.6	52	7.99	18.9
SW424	Off-base	491511.00	6000639.00	15/11/2021	0.2	0.1	High	Cloudy	Low		16.4	5.9	117.4	6.76	145.9
SW427	Off-base	490948.72	6001301.83	15/11/2021	0.4	0.2	Medium	Cloudy	Low		15.3	8.43	129	7.21	142.9
SW430	Off-base	490913.00	6002786.00	15/11/2021	0.4	0.2	Low	Brown	High	Brown, plastic and organic debris	15.8	6.29	142.2	6.67	154
SW431	Off-base	490883.28	6003648.07	17/11/2021	0.5	0.2	Low	Cloudy	Medium	Faint shean to water, surrounded by blackberries	19.3	5.52	154.2	6.78	2.4
SW432	Off-base	490789.00	6003749.00	17/11/2021	0.5	0.2	High	Cloudy	Low		16.9	4.95	131.3	7.05	79.3
SW434	Off-base	490476.00	6003891.00	15/11/2021	0.4	0.2	Low	Clear	Low		16	7.74	122	7.31	194
SW448	On-base	491960.62	5999684.39	15/11/2021	0.5	0.2	Medium	Cloudy	Low		16.2	7.95	74.3	6.93	150.7
SW462	Off-base	495777.32	6001658.16	10/11/2021	1	0.2	High	Clear	Low		14.7	2.29	369	7.73	33
SW463	Off-base	491216.27	6000546.54	15/11/2021	0.5	0.2	Low	Cloudy	Low		16.7	6.69	44.9	6.44	148.7
SW470	Off-base	496154.23	6000093.25	16/11/2021	0.4	0.1	Low	Brown	Low		23.1	4.82	124	6.63	197.3
SW471	Off-base	495945.94	6000282.56	15/11/2021	0.3	0.1	Low	Cloudy	Low		21	5.42	263.8	7.63	141.4
SW487	Off-base	495826.91	6000046.42	16/01/1900	0.4	0.1	Low	Cloudy	Medium		15.7	6.57	406.4	7.47	166.4

F3.01 Equipment Calibration Report
YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus
Serial Number: ~~19H102185~~ 1074758 (RENTAL - ENDIA)

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent?
Carry case	✓	
Attached sensors (x4)	✓	
Spare Batteries	✓	
Connector Cable	✓	
Instruction Manual	✓	

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	✓	✓
Operations check (screen functions)	✓	✓
Temperature check	✓	✓

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	4.00
pH	pH: Buffer Solution 7.00	7.00	7.00
pH	~~pH: Buffer Solution 10.00~~	~~10.00~~	
Redox	Standard ORP solution	235 mV @ 20°c	235 mV @ 20 °c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	100 %
O_2	Sodium Sulphite for 0% Dissolved Oxygen	0%	0.0 % (calibrated)
Conductivity	Standard Conductivity Solution	2.76 µS/cm @ - °c	2.76 mV @ 19 °c auto(calibrated)

Checked/ Calibrated by: [redacted]

Signed [redacted]

Date: 15. 11. 21

[1] YSI Professional Plus – Calibration Tips; Rev A, December 2010.

F3.01 Equipment Calibration Report
YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus
Serial Number: 19H102165

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent?
Carry case	✓	~~✓~~
Attached sensors (x4)	✓	~~✓~~
Spare Batteries	✓	~~✓~~
Connector Cable	✓	~~✓~~
Instruction Manual	✓	~~✓~~

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	✓	✓
Operations check (screen functions)	✓	✓
Temperature check	✓	✓

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	
pH	pH: Buffer Solution 7.00	7.00	
pH	pH: Buffer Solution 10.00	~~10.00~~	
Redox	Standard ORP solution	234 mV @ 20 °c	254 mV @ 20°c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	100%
O_2	Sodium Sulphite for 0% Dissolved Oxygen	0%	0.0% (calibration)
Conductivity	Standard Conductivity Solution	____ µS/cm @ __ °c	____ mV @ __°c

Checked/ Calibrated by: [redacted]

Signed: [redacted]

Date: 15.11.21

[1] YSI Professional Plus – Calibration Tips; Rev A, December 2010.

Date of Bump Test	Job Number	Unit Brand/ Model	Ambient Air Oxygen Calibration		Zero % Oxygen Solution Calibration		Standard Concentrations (Y if all are present)		Ambient Temperature (°C)	Bump Test Reading	Bump Test Readings within ±5%?			Comment	Test by (Name)	(Signature)
9.11.21	DEF19008	YSI Pro Plus [redacted] AW: 3036	100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: 2.76 µS/cm @ — °C ORP: 244 mV @ 15 °C Y / N		18	pH 4.00: 3.93 pH 7.00: 7.08 pH 10.00 — EC: 2.8 µS/cm @ 18 °C ORP: 237 mV @ 19.7 °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N		Serial No: K03-1074758	[redacted]	[redacted]
10.11.21	"	3036	100% Saturation?	Y / N	0% Calibration 0.2 mV	Y / N	pH 4.00 Y / N pH 7.00 Y / N ~~pH 10.00~~ — EC: 2.76 µS/cm @ — °C ORP: 244 mV @ 15 °C Y / N		19	pH 4.00: 3.91 pH 7.00: 7.09 pH 10.00 — EC: 2.55 µS/cm @ 19.5 °C ORP: 235 mV @ 19.5 °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N		Serial No: K03-1074758	[redacted]	[redacted]
11.11.21	"	3036	100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 Y / N pH 7.00 Y / N ~~pH 10.00~~ Y / N EC: 2.76 µS/cm @ — °C ORP: 241 mV @ 15 °C Y / N		12.	pH 4.00: 3.88 pH 7.00: 7.00 pH 10.00 — EC: 2.66 µS/cm @ 12.3 °C ORP: 243 mV @ 12.3 °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N		Serial No: K03-1074758	[redacted]	[redacted]
12.11.21	"	3036	100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: 2.76 µS/cm @ — °C ORP: 241 mV @ 15 °C Y / N		13.	pH 4.00: 3.84 pH 7.00: 7.01 pH 10.00 — EC: 2.60 µS/cm @ 12.2 °C ORP: 240 mV @ 12.7 °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N		Serial No: K03-1074758	[redacted]	[redacted]
16.11.21	"		100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: 2.76 µS/cm @ — °C ORP: 244 mV @ — °C Y / N		12.6	pH 4.00: 4.01 pH 7.00: 7.00 pH 10.00 EC: 2.77 µS/cm @ — °C ORP: 241 mV @ 12.6 °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N		Serial No: K03-1074758		
17.11.21	"	3036	100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: 2.76 µS/cm @ 19 °C ORP: 243.5 mV @ 10 °C Y / N		10.5	pH 4.00: 4.00 pH 7.00: 7.00 pH 10.00 EC: 2.64 µS/cm @ 10 °C ORP: 243.1 mV @ 10 °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N		Serial No: K03-1074758	[redacted]	[redacted]
17.11.21	"	1074758	100% Saturation?	Y / N	0% Calibration	Y / N	**pH 4.00** Y / N **pH 7.00** Y / N pH 10.00 Y / N EC: 2.76 µS/cm @ — °C ORP: ~~244.5~~ 243.5 mV @ 10 °C Y / N		10.5	pH 4.00: 3.99 pH 7.00: 7.01 pH 10.00 EC: 2.72 µS/cm @ 10 °C ORP: 246 mV @ 10 °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N		Serial No: 17C103036	[redacted]	[redacted]
			100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C Y / N			pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N				
			100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C Y / N			pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: (± pH 0.2) Y / N pH 7.00: (± pH 0.2) Y / N pH 10.00 (± pH 0.2) Y / N EC: (± 150µS/cm) Y / N ORP: (± 10mV) Y / N Temp: (± 2°C) Y / N				

WQM USE:

	AW	WM
8	✓	X ← (not calibrated 8.9)
9	✓	✓
10	✓	✓
11	✓	
12		

Equipment Calibration Form
YSI ProPlus

Enqip #: 15311
Company: Cardno
Consultant: [redacted]
PO #: DEF19008
Certificate #: 22814

INSTRUMENT IDENTIFICATION

Model Number: 6050000
Serial Number: K03-1074758
Instrument Type: YSI ProPlus

INSPECTION RECORD

Batteries Checked:	PASS	**Date & Time:**	PASS
Electrodes Cleaned/Checked:	PASS	**Temperature:**	PASS

CALIBRATION DETAILS

Sensor	Cal Solution	Value	Reading
pH	Buffer 4.00	4.00 pH	4.00 pH
	Buffer 7.00	7.00 pH	6.99 pH
Redox	Standard ORP	234.5 mV @ 20 °C	234.5 mV
O_2	Zero Dissolved Oxygen	0.0 %	0.0 %
	Air	100.0 %	100.1 %
Conductivity	Standard Conductivity	2.76 mS/cm	2.76 mS/cm

Calibration Successful: YES

Calibrated By: [redacted] **Test Date:** 5/11/2021

enqip
[redacted]
P [redacted]
E [redacted] | W www.enqip.com.au

Equipment Calibration Form
YSI ProPlus

Enqip #: 15311
Company: Cardno
Consultant: [redacted]
PO #: DEF19008
Certificate #: 22813

INSTRUMENT IDENTIFICATION

Model Number: 6050000
Serial Number: 17C103036
Instrument Type: YSI ProPlus

INSPECTION RECORD

Batteries Checked:	PASS	**Date & Time:**	PASS
Electrodes Cleaned/Checked:	PASS	**Temperature:**	PASS

CALIBRATION DETAILS

Sensor	Cal Solution	Value	Reading
pH	Buffer 4.00	4.00 pH	4.00 pH
	Buffer 7.00	7.00 pH	7.00 pH
Redox	Standard ORP	234.5 mV @ 20 °C	234.5 mV
O_2	Zero Dissolved Oxygen	0.0 %	0.0 %
	Air	100.0 %	100.0 %
Conductivity	Standard Conductivity	2.76 mS/cm	2.76 mS/cm

Calibration Successful: YES

Calibrated By: [redacted] **Test Date:** 5/11/2021

enqip
116 Thistlethwaite St, South Melbourne 3205
P [redacted]
E [redacted] | W www.enqip.com.au

F3.01 Equipment Calibration Report
YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus
Serial Number: ~~19H102185~~ 1074758 (RENTAL - ENDISH)

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent?
Carry case	✓	
Attached sensors (x4)	✓	
Spare Batteries	✓	
Connector Cable	✓	
Instruction Manual	✓	

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	✓	✓
Operations check (screen functions)	✓	✓
Temperature check	✓	✓

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	4.00
pH	pH: Buffer Solution 7.00	7.00	7.00
pH	~~pH: Buffer Solution 10.00~~	~~10.00~~	
Redox	Standard ORP solution	235 mV @ 20°c	235 mV @ 20 °c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	100 %
O_2	Sodium Sulphite for 0% Dissolved Oxygen	0%	0.0 % (calibrated)
Conductivity	Standard Conductivity Solution	2.76 µS/cm @ – °c	2.76 mV @ 19 °c auto(calibrated)

Checked/ Calibrated by: AW

Signed:

Date: 15. 11. 21

[1] YSI Professional Plus – Calibration Tips; Rev A, December 2010.

F3.01 Equipment Calibration Report
YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus
Serial Number: 19H102165

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent?
Carry case	✓	~~✓~~
Attached sensors (x4)	✓	~~✓~~
Spare Batteries	✓	~~✓~~
Connector Cable	✓	~~✓~~
Instruction Manual	✓	~~✓~~

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	✓	✓
Operations check (screen functions)	✓	✓
Temperature check	✓	✓

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	
pH	pH: Buffer Solution 7.00	7.00	
pH	pH: Buffer Solution 10.00	~~10.00~~	
Redox	Standard ORP solution	234 mV @ 20 °c	254 mV @ 20°c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	100 %
O_2	Sodium Sulphite for 0% Dissolved Oxygen	0%	0.0 % (calibration)
Conductivity	Standard Conductivity Solution	____ µS/cm @ __ °c	____ mV @ __°c

Checked/ Calibrated by: AW

Signed: [signature]

Date: 15.11.21

[1] YSI Professional Plus – Calibration Tips; Rev A, December 2010.

Date of Bump Test	Job Number	Unit Brand/ Model	Ambient Air Oxygen Calibration	Zero % Oxygen Solution Calibration	Standard Concentrations (Y if all are present)	Ambient Temperature (°C)	Bump Test Reading	Bump Test Readings within ±5%?	Comment	Test by (Name)	(Signature)
9.11.21	DEF19008	YSI Pro Plus [redacted] AW: 3036	100% Saturation? (Y) / N	0% Calibration (Y) / N	pH 4.00 Y/N pH 7.00 Y/N pH 10.00 Y/N EC: 2.76 µS/cm @ — °C Y/N ORP: 244 mV @ 15 °C Y/N	18	pH 4.00: 3.93 pH 7.00: 7.08 pH 10.00 — EC: 2.8 µS/cm @ 18 °C ORP 237 mV @ 19.7 °C	pH 4.00: (± pH 0.2) Y/N pH 7.00: (± pH 0.2) Y/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) Y/N ORP: (± 10mV) Y/N Temp: (± 2°C) Y/N	Serial No: K03-1074758	AW	
10.11.21	"	3036	100% Saturation? (Y) / N	0% Calibration (Y) / N 0.2 mV	pH 4.00 O/N pH 7.00 O/N ~~pH 10.00~~ O/N EC: 2.76 µS/cm @ — °C O/N ORP: 244 mV @ 15 °C O/N	19	pH 4.00: 3.91 pH 7.00: 7.09 pH 10.00 — EC: 2.55 µS/cm @ 19.5 °C ORP: 235 mV @ 19.5 °C	pH 4.00: (± pH 0.2) Y/N pH 7.00: (± pH 0.2) Y/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) Y/N ORP: (± 10mV) Y/N Temp: (± 2°C) Y/N	Serial No: K03-1074758	NM	
11.11.21	"	3036	100% Saturation? (Y) / N	0% Calibration Y/(N)	pH 4.00 O/N pH 7.00 O/N ~~pH 10.00~~ Y/N EC: 2.76 µS/cm @ — °C O/N ORP: 241 mV @ 15 °C O/N	12.	pH 4.00: 3.88 pH 7.00: 7.00 pH 10.00 — EC: 2.66 µS/cm @ 12.3 °C ORP: 243 mV @ 12.3 °C	pH 4.00: (± pH 0.2) Y/N pH 7.00: (± pH 0.2) Y/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) Y/N ORP: (± 10mV) Y/N Temp: (± 2°C) Y/N	Serial No: K03-1074758	AW	
12.11.21	"	3036	100% Saturation? (Y) / N	0% Calibration (Y) / N	pH 4.00 O/N pH 7.00 O/N pH 10.00 Y/(N) EC: 2.76 µS/cm @ — °C O/N ORP: 241 mV @ 15 °C O/N	13.	pH 4.00: 3.84 pH 7.00: 7.01 pH 10.00 — EC: 2.60 µS/cm @ 12.2 °C ORP: 240 mV @ 12.7 °C	pH 4.00: (± pH 0.2) Y/N pH 7.00: (± pH 0.2) Y/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) Y/N ORP: (± 10mV) Y/N Temp: (± 2°C) Y/N	Serial No: K03-1074758	AW	
16.11.21	"		100% Saturation? Y/N	0% Calibration Y/N	pH 4.00 O/N pH 7.00 O/N pH 10.00 Y/(N) EC: 2.76 µS/cm @ — °C O/N ORP: 241 mV @ — °C O/N	12.6	pH 4.00: 4.01 pH 7.00: 7.00 pH 10.00 EC: 2.77 µS/cm @ — °C ORP: 241 mV @ 12.6 °C	pH 4.00: (± pH 0.2) O/N pH 7.00: (± pH 0.2) O/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) O/N ORP: (± 10mV) O/N Temp: (± 2°C) O/N	Serial No: K03-1074758		
17.11.21	"	3036	100% Saturation? (Y) / N	0% Calibration (Y) / N	pH 4.00 Y/N pH 7.00 Y/N pH 10.00 — EC: 2.76 µS/cm @ 19 °C Y/N ORP: 243.5 mV @ 19 °C Y/N	10.5	pH 4.00: 4.00 pH 7.00: 7.00 pH 10.00 EC: 2.64 µS/cm @ 10 °C ORP: 243.1 mV @ 10 °C	pH 4.00: (± pH 0.2) Y/N pH 7.00: (± pH 0.2) Y/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) Y/N ORP: (± 10mV) Y/N Temp: (± 2°C) Y/N	Serial No: K03-1074758	AW	
17.11.21	"	1074758	100% Saturation? Y/(N)	0% Calibration (Y) / N	**pH 4.00** Y/N **pH 7.00** Y/N pH 10.00 Y/N EC: 2.76 µS/cm @ — °C Y/N ORP: ~~244.5~~ 243.5 mV @ 10 °C Y/N	10.5	pH 4.00: 3.99 pH 7.00: 7.01 pH 10.00 EC: 2.72 µS/cm @ 10 °C ORP: 246 mV @ 10 °C	pH 4.00: (± pH 0.2) Y/N pH 7.00: (± pH 0.2) Y/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) Y/N ORP: (± 10mV) Y/N Temp: (± 2°C) Y/N	Serial No: 17C103036	AW	
			100% Saturation? Y/N	0% Calibration Y/N	pH 4.00 Y/N pH 7.00 Y/N pH 10.00 Y/N EC: ____ µS/cm @ ____ °C Y/N ORP: ____ mV @ ____ °C Y/N		pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: (± pH 0.2) Y/N pH 7.00: (± pH 0.2) Y/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) Y/N ORP: (± 10mV) Y/N Temp: (± 2°C) Y/N			
			100% Saturation? Y/N	0% Calibration Y/N	pH 4.00 Y/N pH 7.00 Y/N pH 10.00 Y/N EC: ____ µS/cm @ ____ °C Y/N ORP: ____ mV @ ____ °C Y/N		pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: (± pH 0.2) Y/N pH 7.00: (± pH 0.2) Y/N pH 10.00 (± pH 0.2) Y/N EC: (± 150µS/cm) Y/N ORP: (± 10mV) Y/N Temp: (± 2°C) Y/N			

WQM USE:

	AW	NM
8	✓	X ← (not calibrated 8.9)
9	✓	✓
10	✓	✓
11	✓	
12		

Equipment Calibration Form
YSI ProPlus

Enqip #: 15311
Company: Cardno
Consultant: Abe Wright
PO #: DEF19008
Certificate #: 22814

INSTRUMENT IDENTIFICATION

Model Number: 6050000
Serial Number: K03-1074758
Instrument Type: YSI ProPlus

INSPECTION RECORD

Batteries Checked:	PASS	**Date & Time:**	PASS
Electrodes Cleaned/Checked:	PASS	**Temperature:**	PASS

CALIBRATION DETAILS

Sensor	Cal Solution	Value	Reading
pH	Buffer 4.00	4.00 pH	4.00 pH
	Buffer 7.00	7.00 pH	6.99 pH
Redox	Standard ORP	234.5 mV @ 20 °C	234.5 mV
O_2	Zero Dissolved Oxygen	0.0 %	0.0 %
	Air	100.0 %	100.1 %
Conductivity	Standard Conductivity	2.76 mS/cm	2.76 mS/cm

Calibration Successful: YES

Calibrated By: Owen Hvalica **Test Date:** 5/11/2021

enqip
116 Thistlethwaite St, South Melbourne 3205
P 1300 218 987
E info@enqip.com.au | **W** www.enqip.com.au

Equipment Calibration Form
YSI ProPlus

Enqip #: 15311
Company: Cardno
Consultant: Abe Wright
PO #: DEF19008
Certificate #: 22813

INSTRUMENT IDENTIFICATION

Model Number: 6050000
Serial Number: 17C103036
Instrument Type: YSI ProPlus

INSPECTION RECORD

Batteries Checked:	PASS	**Date & Time:**	PASS
Electrodes Cleaned/Checked:	PASS	**Temperature:**	PASS

CALIBRATION DETAILS

Sensor	Cal Solution	Value	Reading
pH	Buffer 4.00	4.00 pH	4.00 pH
	Buffer 7.00	7.00 pH	7.00 pH
Redox	Standard ORP	234.5 mV @ 20 °C	234.5 mV
O_2	Zero Dissolved Oxygen	0.0 %	0.0 %
	Air	100.0 %	100.0 %
Conductivity	Standard Conductivity	2.76 mS/cm	2.76 mS/cm

Calibration Successful: YES

Calibrated By: Owen Hvalica **Test Date:** 5/11/2021

enqip
116 Thistlethwaite St, South Melbourne 3205
P 1300 218 987
E info@enqip.com.au | **W** www.enqip.com.au

APPENDIX

E

DATA QUALITY REVIEW

Data Quality Review
Bandiana Military Area, VIC

This Appendix reviews the Quality Assurance (QA) and Quality Control (QC) documentation. Quality assurance encompasses the actions, procedures, checks and decisions undertaken to ensure sample integrity and representativeness, and the reliability and accuracy of analysis results. The QA documentation should also include an indication of the Data Quality Objectives sought in relation to each significant action, test or process involved in the Assessment.

QC activities measure the effectiveness of the QA procedures by undertaking testing, and then comparing results to previously established objectives. QC work will include the internal laboratory testing as well as results of QC samples submitted such as trip blanks and duplicates. The quality of the information and/or data is deemed satisfactory when the QC results demonstrate that agreed objectives have been met.

Cardno undertook a review of its QA/QC as part of the data validation exercise. The findings are summarised below.

QA/QC Aspects	Evidence and Evaluation
	QA Documentation
Sampling and Analysis Quality Plan and Data Quality Objectives	Cardno was engaged by Department of Defence (the client) to carry out the PFAS Ongoing Monitoring Plan (OMP) of The Bandiana Military Area (the site). The monitoring event commenced on 8 November and concluded 17 November, and is in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP) of 22 October 2021 (Our Ref: OMP002_Bandiana_ SAQP_Rev1). The assessment was carried out in general compliance with the following: ▪ Australian Standard AS 4482-2005 Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds. ▪ Australian Standard AS 4482-1999 Guide to the investigation and sampling of sites with potentially contaminated soils, Part 2 - Volatile substances. ▪ Department of Defence (2019), Contamination Management Manual (DCMM), August 2019. ▪ Department of Defence (2019), Pollution Prevention Guideline - Routine Water Quality Monitoring, Department of Defence, Department of Energy, 2018, Quality System Manual Schedule B15. ▪ EPA Victoria (2009), Industrial Waste Resources Guidelines, Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 701. ▪ Heads of Environmental Protection Authority's Australia and New Zealand (HEPA) (2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020. ▪ National Environment Protection Council (NEPC), 1999, National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013) (ASC NEPM). ▪ National Health and Medical Research Council (NHMRC) (2019), Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water, August 2019. ▪ USEPA (2000), Guidance for the Data Quality Objectives Process (EPA QA/G-4). A quality control program was implemented during the investigation and the quality assurance procedures used have been reiterated in the report.

QA/QC Aspects	Evidence and Evaluation
	The investigation was carried out in accordance with the Safe Work method Statements (SWMS) and Occupational Health and Safety (OHS) plan for the site. Detailed work plans were also provided for each phase of investigation and are outlined in the SAQP. The Data Quality Objectives were expressed in terms of the purpose of the assessment and the relevant assessment criteria.
Data Validation Report	This review constitutes a data validation review. This was supported by an Esdat generated "QAQC Checker" excel report, summarised in Tables B3 and B4, Appendix B.
Data Representativeness	
Holding Times	Groundwater and surface water sample analysis holding times were in conformance with EPA Publication IWRG701 2009 *'Sampling and Analysis of Waters, Wastewaters, Soils and Wastes*.
Background Samples	No background samples were collected as part of this assessment.
Equipment Decontamination	The decontamination methodology conducted during this investigation is documented in the body of the report, and was in general conformance with the SAQP and work plans. ▪ Reusable sampling equipment was rinsed with Liquinox® and deionised water prior to the collection of each sample.
Data Precision and Accuracy	
QC Testing – Blind Replicates (Primary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 44 (inclusive of repeat samples) ▪ Blind Replicate Samples Analysed: 8 ▪ Blind Replicate Analyte Pairs: 248 ▪ Number of Analyte Pairs Exceeding Criteria: 4 ▪ Percentage of Analyte Pairs Exceeding Criteria: 1.6% RPD exceedances were associated with PFAS compounds. The PFAS RPD exceedances and are likely attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B4, Appendix B. ***Surface water*** ▪ Acceptance Criteria: RPD < 30 % ▪ Surface water Samples Analysed: 52 ▪ Blind Replicate Samples Analysed: 7 ▪ Blind Replicate Analyte Pairs: 217 ▪ Number of Analyte Pairs Exceeding Criteria: 2 ▪ Percentage of Analyte Pairs Exceeding Criteria: 0.9% RPD exceedances were associated with PFAS compounds. The PFAS RPD exceedances and are likely attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B4, Appendix B.
QC Testing – Field Splits (Secondary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 44 (inclusive of repeat samples) ▪ Blind Replicate Samples Analysed: 8 ▪ Blind Replicate Analyte Pairs: 248 ▪ Number of Analyte Pairs Exceeding Criteria: 30 ▪ Percentage of Analyte Pairs Exceeding Criteria: 12.1% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate

QA/QC Aspects	Evidence and Evaluation
	sample pairs were all within one order of magnitude. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. RPD results are presented in Table B4, Appendix B. ***Surface water*** ▪ Acceptance Criteria: RPD < 30 % ▪ Surface water Samples Analysed: 52 ▪ Blind Replicate Samples Analysed: 7 ▪ Blind Replicate Analyte Pairs: 217 ▪ Number of Analyte Pairs Exceeding Criteria: 27 ▪ Percentage of Analyte Pairs Exceeding Criteria: 12.4% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate sample pairs were all within one order of magnitude. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. RPD results are presented in Table B4, Appendix B.
Trip Blanks	Five (5) trip blanks were collected and laboratory tested for PFAS. All analytes were reported below the limit of reporting (LOR). Trip blank results are presented in Table B4, Appendix B.
Repeat Sampling	Samples from two locations (MW307 and MW342) reported concentrations inconsistent with results reported in 2017 during the DSI (Golder, 2018). These two locations were resampled in December 2021 to confirm the increased concentrations reported. Reported concentrations in December 2021 were consistent with those reported from the November 2021 samples and therefore confirms the November 2021 results.
Laboratory Internal QC	Evidence of the laboratories internal QC testing is present and complete. Both ALS (the primary laboratory) and Eurofins-mgt performed internal QC with adequate testing and mostly satisfactory results for matrix spikes, method blanks and laboratory duplicates.
Laboratory Method Detection Limit	Laboratory reports indicate the method detection limits were generally lower than the respective assessment criteria. The LOR for PFOS in groundwater was 0.01 µg/L, which is above the adopted criterion of 0.00023 µg/L for Maintenance of Ecosystems, however, the PFAS NEMP (HEPA, 2020) allows for the adoption of the laboratory LOR as a screening level rather than a quantified measurement.
NATA endorsement of laboratory reports	Laboratory reports were stamped with the NATA endorsement stamp and signature. Laboratory reports are included in Appendix C of this report.
Calibration of Field Equipment	All field equipment used was calibrated by the equipment supplier. Certificates and daily bump test records are included in Appendix D of this report.
Decontamination and Equipment Blanks	Nine (9) rinsate blanks were collected during the investigation. Rinsate blank samples were tested for PFAS which all reported a concentration below the laboratory LOR. Results are shown in Table B4, Appendix B.

QA/QC Aspects	Evidence and Evaluation
Data Comparability	
Standard Procedures	Fieldwork procedures are detailed in the report and followed the work methods outlined in the SAQP.
Qualified Personnel	Staff involved in managing and reviewing the project and those involved in fieldwork are qualified personnel.
Sample Integrity	Field Chain of Custody forms are included in Appendix C of this report and demonstrate sample integrity.
Data Completeness	
Completeness of Test Program	The scope of work undertaken was generally consistent with that set out in the Sampling and Analysis Quality Plan (SAQP) and Addendum to the SAQP. Variations to the SAQP are detailed in the Factual Report.
Validity of Data Set	The data quality review indicates no significant systematic errors in the data collection process for surface water and groundwater and therefore, the data set used as the basis for the assessment is considered valid and complete.

APPENDIX

F

INFORMATION ABOUT ENVIRONMENTAL REPORTS

About Site Environmental Assessment Reports

1. Introduction

This document explains the Environmental Site Assessment (ESA) process and the context that applies to the use of Environmental Reports issued by Cardno.

2. What is an ESA?

Environmental Site Assessments (ESA) are undertaken for a range of purposes, specific to the brief issued by the client in each case. The scope may include one or a combination of any of the following:

- A factual report of the condition of a portion of the site or one aspect of an entire site.
- Assessment of the contamination levels in soil to be removed from a site – a waste classification assessment.
- Validation of the success of remediation of a site or a portion of a site.
- Provision of a professional opinion about the suitability of a site for one or more uses, in terms of its contamination status.

The scope of any ESA needs to be defined at the outset.

An ESA is not an Environmental Audit. Such audits are undertaken in accordance with the provisions of regulations enacted in various states of Australia, and are referred to as Site Audits in some jurisdictions. Statutory audits provide certification by EPA accredited auditors that a site is suitable for one or more uses. An ESA may provide similar advice but cannot be used in place of an audit if the latter is required by regulation in any instance. However in some circumstances and jurisdictions an ESA is sufficient to provide "environmental sign-off" of a site.

An ESA may be undertaken for due diligence purposes, to establish whether the site has been impacted to the extent that some beneficial uses of the site may be precluded. Due diligence audits in many cases may be completed as non-statutory Audits, although in some jurisdictions they can also be statutory audits, if defined as such at the outset.

3. The ESA Process

The Client generally initiates the ESA process by specifying a brief which identifies the specific objectives of the assessment. If not, it is the consultants' duty to so specify the ESA

In the case of an ESA to provide an opinion about the suitability of the site for use, it would be conducted in accordance with NEPM (Site Assessment). Such ESA would not commence until a thorough site history assessment (Phase 1 Assessment: to identify the potential for significant contamination at a site) is conducted. However, where the history is unclear, a broad screening of chemical parameters can be used to test environmental media. This normally includes a broad range of organic and inorganic compounds and elements, often referred to as an Environmental Screen.

(In the case of an ESA for a purpose other than to provide an opinion about the suitability of the site for use, it is not always necessary to undertake a Phase 1 assessment.)

The ESA requires sampling of soil at representative locations across the site. A NATA accredited laboratory performs the analysis of soil. It is impractical for all of the soil to be assessed. The ESA is often based on a statistical method of grid or random sampling, augmented by targeted sampling at locations known or suspected to be contaminated. Guidance on sampling strategy and density is provided in Australian Standard AS4482.1–2005. However, some considerable degree of judgement is still required in the application of any sampling and testing strategy. For example the blanket application of the "hot spot" method presented in this standard is often inappropriate given its limitations.

The field program also investigates the likelihood of contamination below the site surface. Field investigations must sample and test fill as well as the natural soils. If contamination is found then it is common for further work to be undertaken to characterise, to the extent practical, its vertical and horizontal extent. However, where fill is encountered and testing shows it to be uncontaminated, it must be realised that the heterogeneous nature of the material might mean that not all pockets of contaminated material can be detected using normal sampling regimes.

EPA guidelines for auditors, that may be relevant for an ESA, indicate the need in all cases to consider the potential for groundwater contamination in any site. This does not mean all sites need to be drilled to sample groundwater, but it is most often the case. Most hydrogeological settings and groundwater conditions are complex and vary in space and time. The condition of groundwater is investigated to identify if any beneficial use or environmental value of groundwater is precluded due to contamination.

As previously stated for soil, all groundwater at the site cannot be tested. The environmental investigations are conducted in accordance with industry standards and guidelines (e.g. EPA Vic Pub 668). This provides a level of confidence that a sufficiently comprehensive assessment of the groundwater at the site is achieved.

Where an investigation shows that groundwater is polluted, consideration should be given to assessing the risks and the need for and practicality of any clean up.

4. Environmental Assessment Report

The ESA Report details the findings of the ESA. It provides summary information on the site definition, the reasons for the assessment and other relevant facts. It reviews the scope and quality of the site investigations, laboratory testing and data analyses undertaken. These reports also present a review of the contamination status of the site, the need for any further clean up, and an opinion on the suitability of the site for a range of beneficial uses and land uses such as “residential – low density”, “commercial” etc, as appropriate.

However, as noted above, some ESA have a narrow scope such as for classification of waste soil for removal from site, and do not make conclusions on suitability of site for use.

The ESA Report generally includes copies of other documents and reports, necessary to support the assessment findings, presented as appendices. These can contain more detailed information than the body of the ESA Report. Care should be taken to also read the appended documents and the ESA report in full.

Cardno generally issues reports in electronic form (e-Report) on CD ROM. ESA Reports are issued in this format as Adobe Acrobat™ PDF files. However, a paper copy of the executive summary of the ESA Report is generally issued to the client, and others as required by the brief or by regulation.

5. Limitations of Environmental Assessment Report

The ESA Report is prepared in a manner that can be easily read by a lay person with a legitimate interest in the contamination status of the site, such as the site owner or occupier, EPA and Local Planning Authority. The ESA report is not intended for use by other parties or for other purposes. Anyone who uses the assessment report for purposes other than specified in the report, does so at their own risk.

The site should only be used for one or more of the beneficial uses and land uses identified in the ESA as suitable.

The conditions and qualifications may apply to the suitability of the site for use, and it is the responsibility of the Client to be cognizant of and accept these in accepting the report. Cardno are only responsible for the issuing of the ESA report but accepts no liability for the costs incurred in the implementation of ESA findings.

The ESA provides a “snapshot” of the site conditions at the time of the site investigation. Consequently, the report may not be valid at a later time if there has been any change to the contamination status of the site in that time. Verification of the status of the site may be required in cases where a significant time has elapsed, or site conditions have changed since the assessment and audit.

The ESA is necessarily limited by constraints such as time, cost and available information; although normal professional practice at the time has been applied with all due care to prepare the report. A necessary requirement of this process is the horizontal and vertical interpolation of data from discrete locations. However, site conditions are generally not homogenous and some discrepancies will occur between the actual and predicted results at locations not directly sampled. There is a risk that contamination may occur at the site and not be identified by a competent investigation and assessment. The approach adopted in sampling (a combination of statistically based grid and judgmental sampling) seeks to reduce, but cannot eliminate, this risk.

Where unexpected occurrences of contamination arise, subsequent to the issue of the ESA Report, Cardno should be permitted to make an interpretation of these facts in relation to the ESA Report findings. Consequently, the Client should inform Cardno and seek their opinion. Cardno accepts no liability for costs incurred due to such

unexpected occurrences, given the inherent uncertainties in the assessment process.

Cardno uses information provided by other parties as the basis for the ESA, and reliance on this information is at the discretion of Cardno. However, however Cardno cannot guarantee any of the facts, findings or conclusions presented by other parties. Cardno will not be liable for the use of information, provided by others that is subsequently found to be intentionally misleading.

The ESA Report is not and does not purport to be anything other than a contaminated land ESA. It is not a geotechnical report and bore logs reproduced are for interpretation of the likely distribution of contamination. They are not intended for geotechnical interpretations and may not be adequate for this purpose.

The ESA Report is not intended to be a comprehensive analysis of the presence and associated risk of asbestos in buildings and services. Where asbestos in buildings and services is known or likely, the report may only caution that an appropriately qualified person be engaged to undertake demolition to avoid contamination of the site.

Cardno

13 August 2015

Appendix D OMP Factual Sampling Report – May 2022

©JBS&G Australia Pty Ltd

PFAS OMP Factual Report

Biannual Sampling Event May 2022

Bandiana Military Area

DEF19008



Prepared for
Department of Defence

20 October 2022

Cardno

Contact Information

Cardno Victoria Pty Ltd
ABN 47 106 610 913

Level 4, 501 Swanston Street,
Melbourne Vic 3000
Australia

www.cardno.com
Phone +61 3 8415 7777
Fax +61 3 8415 7788

Document Information

Prepared for	Department of Defence
Project Name	PFAS OMP Factual Report
File Reference	OMP002_Bandiana_E2 FactualReport_Rev2
Job Reference	DEF19008
Date	20 October 2022
Version Number	1
Effective Date	20/10/2022

Author(s):

Approved By:

[redacted]

[redacted]

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Table of Contents

1	Introduction		1
	1.1	Background	1
	1.2	Purpose & Objectives	1
	1.3	Relevant Guidelines	1
2	Scope of Work		2
	2.1	Review / Revision of the SAQP	2
	2.2	Groundwater Monitoring	2
	2.3	Surface Water Monitoring	2
	2.4	Sediment Monitoring	3
	2.5	Data Management	3
	2.6	Deviations from the OMP SAQP	3
3	Methodology		5
	3.1	Groundwater Sampling Methodology	5
	3.2	Surface Water Sampling Methodology	6
	3.3	Sediment Sampling Methodology	7
	3.4	Quality Control / Quality Assurance	8
	3.5	Assessment Criteria	8
4	Field Observations and Results		9
	4.1	Conditions Impacting the Sampling Event	9
	4.2	Groundwater	9
	4.3	Surface water	11
	4.4	Sediment	12
	4.5	Data Validation	12
5	Summary and Conclusions		13
6	References		14

Appendices

Appendix A Figures
Appendix B Data Assessment Tables
Appendix C Laboratory Certificates
Appendix D Field Records & Calibration Certificates
Appendix E Data Quality Review
Appendix F Information about Environmental Reports

Tables

Table 2-1 Groundwater Monitoring Locations 2

Table 2-2	Surface Water Monitoring Locations	2
Table 2-3	Sediment Monitoring Locations and Frequency	3
Table 2-4	Deviations from the SAQP	4
Table 3-1	Groundwater Sampling Method	5
Table 3-2	Surface Water Sampling Method	7
Table 3-3	Sediment Sampling Method	7
Table 3-4	Criteria for Groundwater and Surface Water	8
Table 4-1	Summary of Groundwater Results Exceeding Adopted Criteria	10
Table 4-2	Summary of Groundwater Results with First-time Detections or New Exceedances of Adopted Criteria	10
Table 4-3	Summary of Surface Water Results Exceeding Adopted Criteria	11
Table 5-1	Summary of Results	13

List of Abbreviations and Units

Chemical Names

DOC	Dissolved Organic Carbon
DO	Dissolved Oxygen
PFAS	Per- and Poly-fluoroalkyl Substances
PFHxS	Perfluorohexane sulfonic acid
PFOA	Per-fluoro-octanoic Acid
PFOS	Per-fluoro-octane Sulfonate
TDS	Total Dissolved Solids (salinity of water)
TSS	Total Suspended Solids

Technical Terms

AFFF	Aqueous Film-Forming Foam
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
AS	Australian Standard
AST	Above-ground Storage Tank
BGL	Below Ground Level
COC	Chain of Custody
CSM	Conceptual Site Model
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
HHERA	Human Health and Ecological Risk Assessment
HIL	Health Investigation Level
HSL	Health Screening Level
LOR	Limit of Reporting
N/A	Not Applicable
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environmental Protection Measure
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percentage Difference
SAQP	Sampling and Analysis Quality Plan
SEPP	State Environment Protection Policy

Units

ha	Hectares
mBGL	Metres Below Ground Level
mbTOC	Metres below Top of Casing
mg/kg	Milligram per Kilogram (approximately equivalent to ppm)
mg/L	Milligram per Litre
ppm	Parts per Million
µg/L	Micrograms per Litre
µS/cm	Micro Siemens per Centimetre (Electrical Conductivity - Water)

Site Specific

OMP	Ongoing Monitoring Plan
DCMM	Defence Contamination Management Manual
ESdat	Environmental data management software

1 Introduction

1.1 Background

Cardno was engaged by the Department of Defence ("Defence" or "the Client") to carry out the Per- and Poly-Fluoroalkyl Substances (PFAS) Ongoing Monitoring Plan (OMP) at Bandiana Military Area ("the Site"). The Bandiana Military Area (BMA) is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

The OMP was carried out in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP):

> Cardno, 13 May 2022. Reference: DEF19008_OMP002, '*PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area'*, Rev 1.2.

For the purposes of this report:

> The "On-Site Monitoring Area" (the 'Site') is defined as BMA and is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

> The "Off-Site Monitoring Area" is defined as comprising Jack in the Box Creek to the north west of South Bandiana to its confluence with Wodonga Creek, an unnamed creek to the east of North Bandiana to its confluence with the Kiewa River, and the Kiewa River and western Kiewa River floodplain from Middle Creek in the south to north of the unnamed creek.

> The "Management Area" (MA) is defined as comprising the On-Site Monitoring Area and the Off-Site Monitoring Area.

The location of the Site (BMA), MA, the On-Site Monitoring Area and the Off-Site Monitoring Area are displayed in Figure 1 of Appendix A.

1.2 Purpose & Objectives

The objective of the OMP is to assess the changes in the nature and extent of PFAS within the environment, specifically where there is an identified potentially elevated risk to a receptor or a potential future risk to a receptor associated with Defence's historical use of Aqueous Film Forming Foam (AFFF).

The purpose of this PFAS OMP factual report is to provide an up-to-date status of the condition of the Site as it is currently understood in relation to the most recent sampling event.

The objectives of the report are:

> To provide a succinct summary of the May 2022 sampling event and provision of analytical results with supporting tables and figures.

> To provide confirmation of the current understanding of risk.

> To provide supporting data for the assessment of management actions, where relevant.

1.3 Relevant Guidelines

This assessment has been undertaken in general accordance with applicable industry standards for a site investigation for the purpose, objectives and scope identified in this report. These standards are set out in:

> Australian and New Zealand Guidelines, 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

> Australian Standard AS 4482-2005 *Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds*.

> Department of Defence, Department of Energy, 2018, *Quality System Manual Schedule B15*.

> Heads of Environmental Protection Authority's Australia and New Zealand (HEPA), 2020, *PFAS National Environmental Management Plan (NEMP),* Version 2.0, January 2020.

> National Environment Protection Council (NEPC), 1999, *National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013)* (ASC NEPM).

> National Health and Medical Research Council (NHMRC), 2019, *Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water*.

> Standards Australia, 1998, AS/NZ 5667:1998 *Water quality – sampling*.

> U.S. Environmental Protection Agency (EPA), 2000, '*Guidance for the Data Quality Objectives Process (EPA QA/G-4)*'.

> USEPA, 2002, '*Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8)'.*

2 Scope of Work

Cardno carried out the following tasks in order to satisfy the purpose and objectives of this assessment.

2.1 Review / Revision of the SAQP

Cardno undertook a review of the SAQP (Rev1.2; Cardno, 2022) prior to commencement of sampling and updated four annual groundwater sampling locations to biannual sampling frequency following the significant increases in PFAS concentration identified in two on-Site wells during the November/December 2021 event. The SAQP will be reviewed and further revised as required prior to the next monitoring event scheduled for October/November 2022.

2.2 Groundwater Monitoring

Sampling of selected groundwater monitoring wells was performed in general accordance with the SAQP, applying methods set out in Section 3 of this report. The groundwater monitoring wells monitored as part of the OMP May 2022 biannual sampling event are presented in Table 2-1, and are shown in Figure 3, Appendix A.

Table 2-1 Groundwater Monitoring Locations

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Monitoring Well / Bore ID
Jack In the Box Creek	Biannual	On-Site	MW304, MW307, MW312.
		Off-Site	MW360, MW361.
Kiewa River	Biannual	On-Site	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_I, MW046_D, MW052, MW342, MW345, MW346, MW350_S, MW350_D, MW351, MW352, MW353, MW354, MW403 and MW404.
		Off-Site	MW356, MW357, OTH019.

2.3 Surface Water Monitoring

The surface water sampling locations monitored as part of the OMP May 2022 biannual sampling event are presented in Table 2-2, and are shown in Figure 4, Appendix A.

Table 2-2 Surface Water Monitoring Locations

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Monitoring Location ID
Jack In the Box Creek	Biannual	On-Site	SW302, SW307, SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, and SW448.
		Off-Site	SW424, SW427, SW430, SW431, SW432, SW434 and SW463.
Kiewa River	Biannual	On-Site	SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW382, SW387 and SW388.

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Monitoring Location ID
		Off-Site	SW390, SW393, SW395, SW396, SW397, SW398, SW400, SW401, SW403, SW404, SW405, SW409, SW412, SW416, SW462, SW470, SW471 and SW487.

2.4 Sediment Monitoring

The sediment sampling locations monitored as part of the OMP May 2022 biannual sampling event are presented in Table 2-3, and are shown in Figure 5, Appendix A.

Table 2-3 Sediment Monitoring Locations and Frequency

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Monitoring Location ID
Jack in the Box Creek	Annual (February to May)	On-Site	SD323.
		Off-Site	SD424 and SD463.
Kiewa River	Annual (February to May)	On-Site	SD346, SD355, SD375 and SD382.
		Off-Site	SD395, SD396, SD397, SD400 and SD412.

2.5 Data Management

All the data included in the report have been collected, uploaded to the ESdat database and reviewed according to the data management requirements of the Defence Contamination Management Manual (DCMM) Annex L.

2.6 Deviations from the OMP SAQP

Deviations from the SAQP were attributed to a lack of sampling media or access constraints, as summarised in Table 2-4. On-Site and off-Site sampling and testing was undertaken at 32 groundwater monitoring wells and 12 sediment sampling locations. On-Site and off-Site sampling and testing was planned at 53 surface water locations but was only completed at 43 surface water locations. Further details of why sampling could not be completed at some locations are provided in Table 2-4..

Table 2-4 Deviations from the SAQP

Location	Deviation	Comment/Justification	Impact on Existing Dataset
Groundwater			
OTH019	Alternate sampling method	No monitoring well access, sample collected from tap following purging of bore by way of running tap for 1 minute.	No impact – sample method has been consistent throughout OMP.
Surface Water			
SW302	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the downstream locations were also dry during this sampling event. The location was not sampled in the previous event November 2021 as it was dry.
SW307	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as location last sampled in the November 2021 sampling event where a first-time detection and new exceedance of drinking water criteria was reported for PFOS+PFHxS. Downstream locations have been sampled in this event, noting that downstream locations are off-Site.
SW310	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the location last sampled in the November 2021 sampling event where a first-time detection and new exceedance of drinking water criteria was reported for PFOS+PFHxS. Downstream locations have been sampled in this event, noting that downstream locations are off-Site.
SW311	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the location last sampled in the November 2021 sampling event where a first-time detection of PFOA and PFOS+PFHxS and a new exceedance of drinking water criteria was reported for PFOS+PFHxS. Downstream locations have been sampled in this event, noting that downstream locations are off-Site.
SW313	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the location last sampled in the November 2021 sampling event where a first-time detection of PFOA and PFOS+PFHxS and a new exceedance of drinking water criteria was reported for PFOS+PFHxS. Downstream locations have been sampled in this event, noting that downstream locations are off-Site.
SW332	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the location last sampled in the November 2021 sampling event where results were above the laboratory limit of reporting (LOR), but below adopted drinking water criteria for PFOS+PFHxS. Downstream locations have been sampled in this event.
SW340	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the location last sampled in the November 2021 sampling event where results were above the adopted drinking water criteria for PFOS+PFHxS and PFOA, consistent with 2017 concentrations. Downstream locations have been sampled in this event, noting that downstream locations are off-Site.
SW379	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the location last sampled

Location	Deviation	Comment/Justification	Impact on Existing Dataset
			in the November 2021 sampling event where a first-time detection of PFOA and PFOS+PFHxS and a new exceedance of drinking water criteria was reported for PFOS+PFHxS. No downstream locations present in OMP.
SW380	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the location last sampled in the November 2021 sampling event where a first-time detection and new exceedance of adopted drinking water criteria was reported for PFOS+PFHxS. Downstream location (SW379) not sampled this event.
SW448	Not Sampled	Location dry	Data gap- This is considered to have minor impact on the monitoring program as the location was last sampled in the November 2021 sampling event where results were reported above the LOR for PFOA and PFOS+PFHxS and above the adopted drinking water criteria for PFOS+PFHxS and PFOA. Downstream locations have been sampled in this event.

3 Methodology

3.1 Groundwater Sampling Methodology

Groundwater monitoring was undertaken as detailed in Table 3-1.

Table 3-1 Groundwater Sampling Method

Activity	Details
Dates of Field Activity	2 to 9 May 2022
Well Gauging	Standing Water Levels (SWL) were gauged using an interface probe. All wells were measured against a specified mark at the top of the well casing.
Groundwater Field Parameters	Groundwater water quality parameter field measurements (field parameters) were recorded with a water quality meter before sample collection (with the sample in a clean jar). The following field parameters were recorded using a water quality meter: ▪ pH. ▪ Electrical conductivity (EC). ▪ Oxidation reduction potential (ORP). ▪ Dissolved oxygen (DO). ▪ Temperature. Field parameters measured by the water quality meter were recorded on field data records. All field instruments (e.g. water quality meter) were calibrated by the equipment supplier to optimise the accuracy of the measurements taken. Bump tests were also completed daily by field staff during the monitoring event. Calibration certificates and bump test records are provided in Appendix D.
Deployment of HydraSleeve	The HydraSleeves® were deployed with attached weights in order for sample collection to begin at the lowest point of the well screen. New HydraSleeves® were deployed following the gauging of all wells in the OMP in November 2021. Any HydraSleeves® that are found to be worn or damaged are replaced with a new HydraSleeve®.

Activity	Details
Retrieval of HydraSleeves (Sample Collection)	At the majority of locations, HydraSleeve® sampling devices were left in wells from the previous sampling event, ensuring the wells were restabilised following the slight disturbance caused by sampler deployment. Where only bottom-weights were used, HydraSleeves® were left in wells for a minimum of four hours to allow restabilisation of the well following the slight disturbance caused by sampler deployment. Where both top and bottom-weights were used, HydraSleeves® were left in wells for a minimum of 24 hours to allow proper compression of the HydraSleeve® and restabilisation of the well following the slight disturbance caused by sampler deployment. Samples were collected via continuous pull method at a rate allowing the water to pass through the check valve into the sample sleeve. Samples were discharged immediately (to minimise changes in chemistry) via a discharge tube. The same HydraSleeves® were redeployed after sampling in preparation for the next sampling event.
Sample collection by bailer or tap	As per the SAQP, where insufficient water is retrieved with the HydraSleeve®, samples will be collected by bailer. For bailer sampling, wells will be purged three bore volumes, or until dry, whichever is sooner, prior to sample collection. Where sampling of a well is required from a tap due to access constraints, the well will be purged by running water for one minute prior to sample collection.
Decontamination procedure	Dedicated HydraSleeves® were used at each groundwater monitoring well, thus removing the need for decontamination. Where HydraSleeves® could not be used, dedicated bailers were used instead which also did not require decontamination. All re-usable sampling equipment was thoroughly washed using PFAS & phosphate-free detergent, then double rinsed with clean water before the sample collection.
Sample identification, preservation transport and holding times	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Samples were collected directly into appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (CoC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All groundwater samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Groundwater quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 water samples (three samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 water samples (three samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling equipment (e.g. interface probe)] (six samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (one sample total).

3.2 Surface Water Sampling Methodology

Surface water monitoring was undertaken using a grab method as detailed in Table 3-2.

Table 3-2 Surface Water Sampling Method

Item	Details
Dates of Field Activity	2 to 9 May 2022
Field parameters	Surface water field parameters (i.e. pH, EC, ORP, DO, and temperature) were recorded at the time of sampling using a pre-calibrated water quality meter. Field observations such as odours and flow were also recorded on field sampling sheets.
Sampling Method	Where possible, the samples were collected directly into sample containers. Where depth permits, sample bottles were positioned at least 10 cm below the surface water level and above the sediment bed and orientated with the opening facing downwards to avoid the collection of surface films. Where access to surface water is difficult, the sample is collected by attaching the sample bottles to a long-handled sampling device (telescopic pole) which are directly filled by lowering the sample bottle into the surface water body. The sample bottles are attached so that the telescopic pole is not in direct contact with the opening of the sample bottle. Samples were collected in accordance with Australian/New Zealand Standards (AS/NZS 5667.1:1998) '*Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples'*.
Decontamination	All re-usable sampling equipment (e.g. telescopic pole) were thoroughly washed using phosphate-free detergent (Liquinox), and subsequently double rinsed with de-ionised water before the sample collection.
Sample identification, preservation, transport and holding times.	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM. Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (COC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All surface water samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Surface water quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 water samples (four samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 water samples (four samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling equipment (e.g. telescopic pole)] (six samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (one sample total).

3.3 Sediment Sampling Methodology

Table 3-3 Sediment Sampling Method

Item	Details
Dates of Field Activity	2 to 9 May 2022
Sample Collection	Sediment samples were collected at the sediment/water interface using the required hand tools (e.g. trowel), with samples placed directly into appropriately labelled, laboratory supplied sample

	containers and packed in chilled containers for delivery to the laboratory under Chain of Custody documentation. At each sampling location, the sediment sample was visually assessed and observations (including physical description) recorded on field data sheets.
Decontamination	All re-usable sampling equipment (e.g. trowel) were thoroughly washed using phosphate-free detergent (Liquinox), and subsequently double rinsed with clean water before the sample collection.
Sample identification, preservation, transport and holding times.	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM. Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (COC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All sediment samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Sediment quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 sediment samples (two samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 sediment samples (two samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling equipment (e.g. trowel)] (six samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (one sample total).

3.4 Quality Control / Quality Assurance

A critical aspect of site assessments is the demonstration of the quality of the data used as the basis for the assessment. This is achieved through a Data Validation process which includes a review of the following data quality indicators, as described in the SAQP:

- QA documentation.
- Bias.
- Data Representativeness.
- Data Precision & Accuracy.
- Data Comparability.
- Data Set Completeness.

A detailed review of these aspects has been undertaken, the results of which are presented in Appendix E. A summary of the data validation from the QA/QC review is included in Section 4.5 below.

3.5 Assessment Criteria

3.5.1 Groundwater and Surface Water

The adopted assessment criteria for groundwater and surface water are detailed in Table 3-4.

Table 3-4 Criteria for Groundwater and Surface Water

Exposure Scenario	Adopted Assessment Criteria		Guidance
	PFHxS / PFOS	PFOA	
	µg/L		

Human Health - Surface Water Recreational	2[2]	10	PFAS NEMP (HEPA, 2020)
Human Health - Drinking Water Quality Guideline[1]	0.07[2]	0.56	PFAS NEMP (HEPA, 2020)
Ecological (99% species protection – high conservation value systems)	0.00023[3,4]	19	PFAS NEMP (HEPA, 2020)
Ecological (95% species protection – slightly to moderately disturbed systems)	0.13[3]	220	PFAS NEMP (HEPA, 2020)

1. Drinking Water screening guidelines have been adopted for screening purposes for Industrial Water use, Stock Water use and Agriculture/Parks/Gardens Water use.
2. Combined PFOS and PFHxS.
3. PFOS only.
4. The criterion of 0.00023 µg/L is lower than the laboratory LOR, however, the PFAS NEMP (HEPA, 2020) allows for the adoption of the laboratory LOR as a screening level rather than a quantified measurement.

3.5.2 Sediment

No national assessment criteria have been established.

4 Field Observations and Results

4.1 Conditions Impacting the Sampling Event

In the seven days prior to the sampling event (2 to 9 May 2022), 9.6 mm of rain was recorded at the nearest weather station (082056), located in Wodonga. During the sampling event (2 to 9 May 2022), 1.0 mm of rain was recorded at weather station 082056. The total rainfall observed in May 2022 (40 mm) was slightly lower than the historical average of 45.6 mm (2020 to 2022). Sampling of surface water following a reasonable rain event (35mm over four days) is preferable as locations may have insufficient volume for sampling, however due to the limited rainfall in May 2022, no reasonable rain events were identified within the weeks preceding or following the May 2022 sampling event. This likely resulted in additional locations being observed as dry during the event, comparative to the November 2022 event.

No on-site activities with the potential to impact sample collection or the results were noted.

4.2 Groundwater

4.2.1 Summary of Field Observations

4.2.1.1 Water quality parameter field measurements

Stabilised water quality parameter field measurements, water colour and turbidity observations recorded during the groundwater sampling program are presented in field sampling record sheets, included in Appendix D. Groundwater varied from clear to brown with low to medium turbidity and no notable changes were recorded relative to the November 2021 sampling event observations.

4.2.1.2 Groundwater Elevation and Migration

Groundwater elevation and flow direction across the three bases included in the PFAS OMP is summarised below:

- South Bandiana: Groundwater elevations observed at South Bandiana during the sampling event ranged from 160.115 mAHD at MW304 to 166.352 mAHD at MW329. Slight groundwater mounding was observed at MW329. Well MW326 was damaged due to impact, and is presumed to be blocked which has prevented the measurement of water level. Groundwater flow is inferred to flow in a north-westerly direction toward the Jack in the Box Creek. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling event.
- North Bandiana: Groundwater elevations observed at North Bandiana during the sampling event ranged from 163.334 mAHD at MW345 to 165.698 mAHD at MW342. Groundwater flow is inferred to flow in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling event.

> East Bandiana: Groundwater elevations observed at East Bandiana during the sampling event ranged from 158.850 mAHD at MW018 to 160.606 mAHD at MW052. Groundwater flow is inferred to flow in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling event.

Groundwater elevation contours and flow directions for May 2022 are shown in Figure 2, Appendix A. Gauging data are presented in Appendix D.

4.2.2 Groundwater Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, and are presented in Table B1, Appendix B, and summarised in Table 4-1 below. Of the 32 primary samples that were tested, PFOA was reported above the LOR in 19 samples, and Sum of PFHxS and PFOS in 31 samples.

Table 4-1 Summary of Groundwater Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW052, MW304, MW307, MW342, MW345, MW350_D, MW350_S, MW351, MW352, MW353, MW354, MW357, MW360, MW361, MW403, MW404, OTH019	0.00023[2]	88.8	29	29	None
PFOA	MW035, MW042, MW043, MW052, MW307, MW350_S, MW403, MW404	0.56[1]	49.4	19	8	None
Sum of PFHxS and PFOS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW052, MW304, MW307, MW312, MW342, MW345, MW350_D, MW350_S, MW353, MW354, MW360, MW361, MW403, MW404, OTH019	0.07[1]	644	31	27	None

Note:
1. Drinking water assessment criteria
2. Ecological assessment criteria
3. Significant concentration change defined as an order of magnitude increase or decrease

Results have also been compared to available historical data. All concentrations reported during this event were generally consistent with previous sampling events.

A summary of locations where a first-time detection, or a new exceedance of guideline values, of PFOS, Sum of PFHxS and PFOS, or PFOA, were reported is provided in Table 4-2 below. The laboratory reports are provided in Appendix C.

Table 4-2 Summary of Groundwater Results with First-time Detections or New Exceedances of Adopted Criteria

Deviation Type	Monitoring Well	Sum of PFHxS + PFOS concentration (µg/L)		PFOA concentration (µg/L)		PFOS concentration (µg/L)	
		May 2022	Previous Maximum	May 2022	Previous Maximum	May 2022	Previous Maximum

New exceedance of the NEMP (HEPA, 2020) drinking water guidelines	MW035	**12.4**	**12.1**	**0.59**	**0.54**	**5.07**	**3.97**
	MW304	**0.16**[1]	0.02	<0.02	<0.01	**0.1**[1]	**0.02**

Note:
Location with first-time detection of PFOS + PFHxS, PFOA or PFOS in latest monitoring round
Location with a new exceedance of lowest adopted guideline values in latest monitoring round
Bold: Exceedance of lowest adopted guideline values
1. Result recorded on quality control (duplicate or split) sample

Findings are summarised as follows:

- One groundwater sampling location (MW304) reported a new exceedance of the Drinking Water criteria of Sum of PFHxS and PFOS.
- One groundwater sampling location (MW035) reported a new exceedance of the Drinking Water criteria of PFOA.
- No groundwater sampling locations reported a first-time detection of Sum of PFHxS and PFOS, PFOS or PFOA.

4.3 Surface water

4.3.1 Summary of Field Observations

4.3.1.1 Water quality parameter field measurements

Stabilised water quality parameter field measurements, water colour and turbidity observations recorded during the surface water sampling program are presented in field sampling record sheets, included in Appendix D. Surface water varied from cloudy to brown with low to high turbidity and flow rate ranged from low to medium. Flow rates were generally lower than those observed in November 2022.

As noted in Section 4.1, during the May 2022 sampling event a number of on-Site locations were unable to be sampled as they were dry during the event, due to the lack of rainfall prior to and during the event as compared to the previous sampling in November 2022.

4.3.2 Surface Water Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, presented in Table B2, Appendix B, and summarised in Table 4-3 below. Of the 43 primary samples that were tested, PFOA was reported above the LOR in 19 samples, and Sum of PFHxS and PFOS in 36 samples.

Table 4-3 Summary of Surface Water Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS	SW316, SW321, SW322, SW323, SW324, SW326, SW333, SW336, SW338, SW346, SW349, SW355, SW370, SW374, SW375, SW387, SW388, SW395, SW396, SW397, SW400, SW401, SW403, SW405, SW409, SW412, SW424, SW427, SW431, SW432, SW434, SW462, SW463, SW470, SW471, SW487	0.00023[2]	7.64	36	36	SW326, SW430 (decrease)
PFOA	-	0.56[1]	0.35	19	0	SW326 (decrease)

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
Sum of PFHxS and PFOS	SW316, SW321, SW322, SW323, SW324, SW326, SW333, SW336, SW338, SW346, SW349, SW355, SW370, SW375, SW387, SW388, SW395, SW396, SW397, SW400, SW401, SW403, SW405, SW412, SW424, SW463, SW470, SW471, SW487	0.07[1]	8.31	36	29	SW326, SW430 (decrease)

Note:
1. Drinking water assessment criteria.
2. Ecological assessment criteria.
3. Significant concentration change defined as an order of magnitude increase or decrease.

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- SW326: Sum of PFHxS and PFOS has decreased by one order of magnitude from 10.1 µg/L in November 2021 to 0.69 µg/L in this event. PFOA has also decreased by one order of magnitude from 0.38 µg/L in November 2021 to 0.01 µg/L in this event.
- SW430: Sum of PFHxS and PFOS has decreased by one of magnitude from 0.16 µg/L in November 2021 to below LOR in this event.

All other concentrations reported during this event were generally consistent with previous sampling events.

No surface water sampling locations reported a first-time detection or new exceedance of Sum of PFHxS and PFOS or PFOA.

4.4 Sediment

4.4.1 Summary of Field Observations

Odour, colour and other observations recorded during the sediment sampling program are presented in field sampling record sheets, included in Appendix D.

4.4.2 Laboratory Results

National assessment criteria have not been established for PFAS in sediment. The results of laboratory analysis have been compared against historical results, presented in Table B3, Appendix B and summarised below.

Of the 12 primary samples analysed, one sample reported PFOA concentrations above the LOR, and 11 samples reported Sum of PFHxS and PFOS concentrations above the LOR.

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- SD355: Sum of PFHxS and PFOS has decreased by one order of magnitude from a previous result of 0.0128 mg/kg in October 2017 to 0.001 mg/kg in this event.

4.5 Data Validation

The data validation process has concluded that there are no significant systematic errors in the data collection process. Therefore, the data set used as the basis for the sediment, surface water and groundwater assessment are considered valid and complete. A detailed Data Quality Review is included in Appendix E.

5 Summary and Conclusions

Cardno conducted the May 2022 biannual groundwater, surface water and sediment monitoring event at BMA as part of the PFAS OMP. On-site and off-site sampling and testing was undertaken at 32 groundwater monitoring wells, 43 surface water locations and 12 sediment sampling locations.

Groundwater levels were gauged in all accessible wells before sampling. Groundwater flow was interpreted be consistent with the November 2021 to flow in a south-westerly direction from South Bandiana towards Jack in the Box Creek, easterly direction from North Bandiana and East Bandiana towards the Kiewa River.

Table 5-1 Summary of Results

Activity	Details
Deviations from OMP SAQP	> One groundwater well was sampled from a tap connected to the pump in the well due to there being no direct monitoring well access. > 10 surface water sampling locations were not sampled due to the locations being dry.
Groundwater Analytical Results	> 32 groundwater samples were collected in total. > No samples reported a first-time detection of Sum of PFHxS and PFOS or PFOA. > One sample reported a new exceedance of the Drinking Water assessment criteria for PFOA. > One sample reported a new exceedance of Drinking Water assessment criteria for Sum of PFHxS and PFOS. > All groundwater results were generally consistent with the previous monitoring event.
Surface Water Analytical Results	> 43 surface water samples were collected in total. > No samples reported a first-time detection and/or new exceedance of the adopted ecological and drinking water criteria. > Two surface water samples reported an order of magnitude decrease for PFOS and Sum of PFHxS and PFOS compared to the previous event. > One surface water sample reported an order of magnitude decrease for PFOA compared to the previous event. > All other concentrations reported during this event were generally consistent with previous sampling events.
Sediment Analytical Results	> 12 sediment samples were collected in total. > No samples reported first-time detections of Sum of PFHxS and PFOS or PFOA. > One sediment sample reported an order of magnitude decrease for Sum of PFHxS and PFOS compared to previous event.
Next Scheduled Monitoring Event	> The next OMP monitoring event is scheduled for October/November 2022. > SAQP to be reviewed and updated as required prior to the next monitoring event.

6 References

General References

1. ANZECC and ARMCANZ (2000), Australian Water Quality Guidelines for Fresh and Marine Water Quality.
2. Defence (2019), Defence Contamination management Manual (DCMM).
3. Defence (2021), PFAS OMP Factual Report Guidance, Version 0.2, May 2021.
4. Environmental Protection Agency (United States EPA; 2002), EPA/240/R-02/004 Guidance on Environmental Data Verification and Data Validation, November 2002.
5. The Heads of EPAs Australia and New Zealand (HEPA; 2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020.
6. National Environment Protection Council (NEPC; 2013), National Environmental Protection (Assessment of Site Contamination) Measure (as amended), registered May 2013.
7. National Health and Medical Research Council (2011 – updated 2018), National Water Quality Management Strategy Australian Drinking Water Guidelines, 6 August 2018.
8. Nation Health and Medical Research Council (NHMRC; 2019), Guidance on Per and Poly-fluoroalkyl Substances (PFAS) in Recreational Water, August 2019.
9. Standards Australia/Standards New Zealand (1998), AS5667.1:1998 Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.
10. Standards Australia (1999), AS4482.2-1999 Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 – Non-volatile and semi-volatile compounds.
11. USEPA (2000), Guidance for the Data Quality Objectives Process, EPA QA/G-4, U.S. Environmental Protection Agency.
12. USEPA (2002), Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8, U.S. Environmental Protection Agency.

Site Specific References

13. Cardno (2022), PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area, Rev 1.2, 13 May 2022.
14. Golder (2018), Detailed Site Investigation – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations, 14 June 2018 (reference 1777738-081-R-RevB).
15. Golder (2020), Human Health and Ecological Risk Assessment – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations, November 2020 (reference 1777738-150-R-RevB).
16. Golder (2020a), PFAS Management Area Plan – Bandiana Military Area, November 2018 (reference 1777738-153-R-RevA-PMAP,Final,November2020)

APPENDIX A

FIGURES

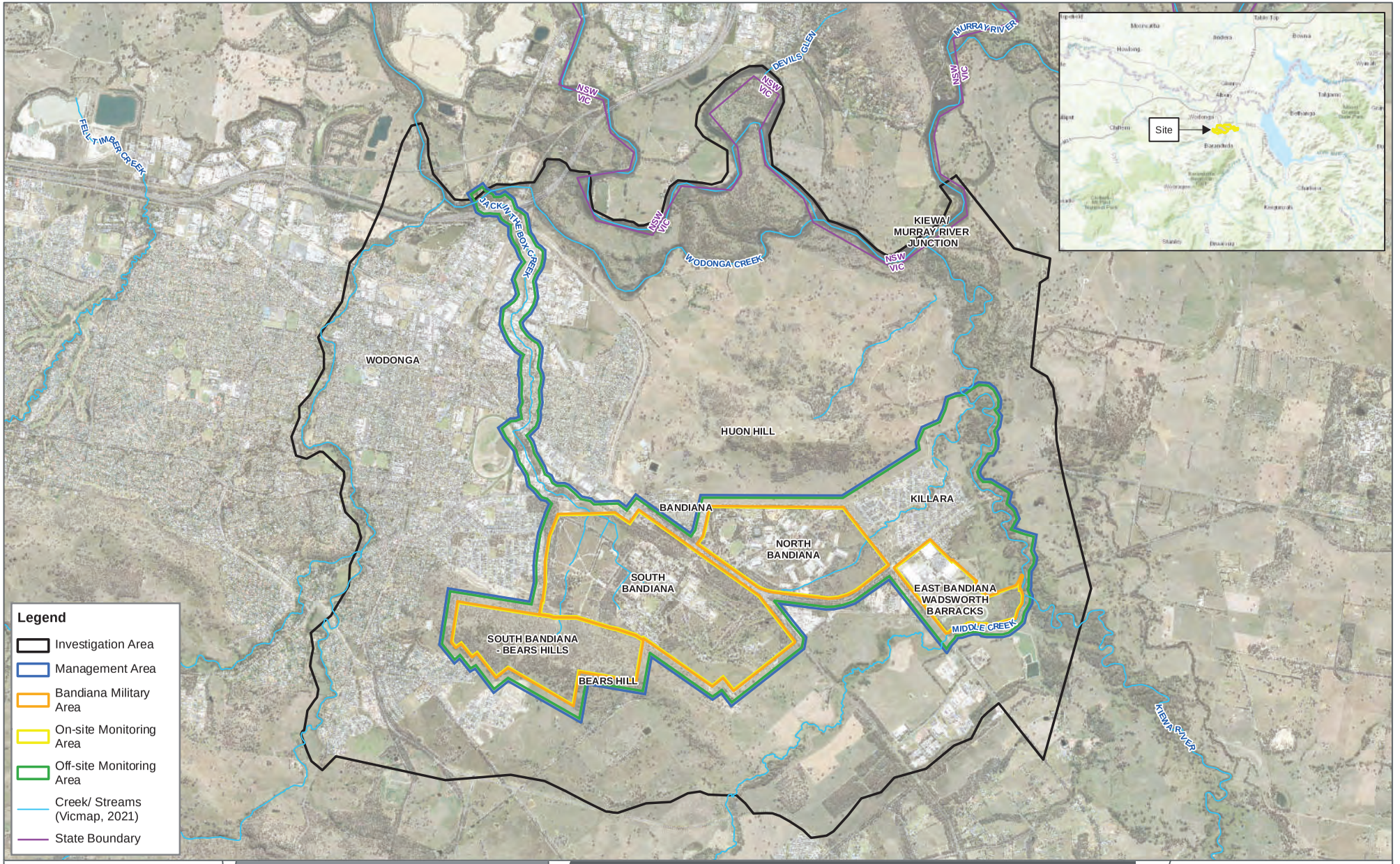


FIGURE 1

1:38,000 Scale at A3

Metres

0 1,000 2,000

Site Locality Plan

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2022-06-30 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0150-SiteLocalityPlan_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

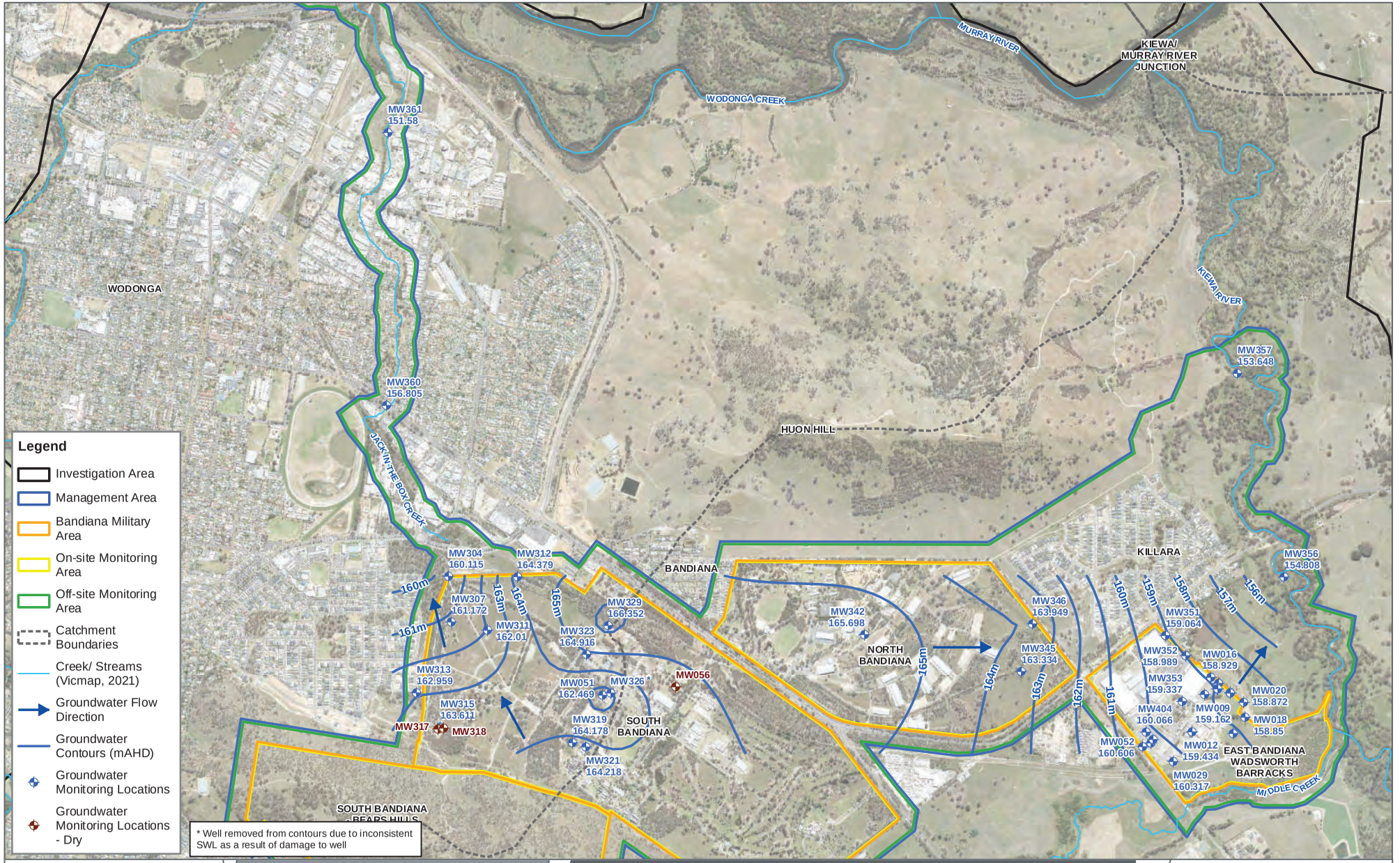


FIGURE 2

1:20,000 Scale at A3

Metres

0 500 1,000

Groundwater Elevation Contours (May, 2022)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

N

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2022-09-06 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0235-GW_ElevContours_RegionalA_B.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

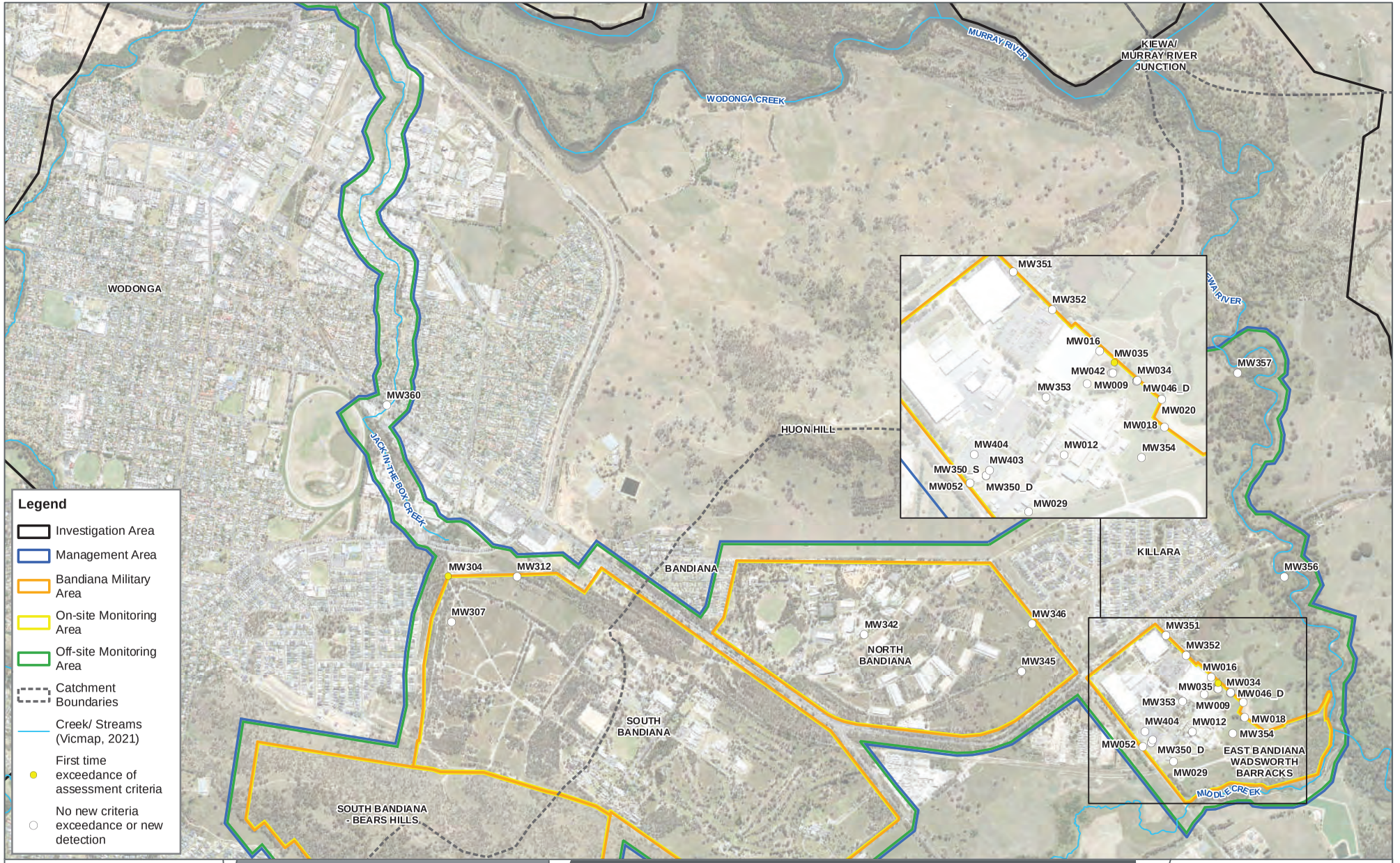


FIGURE 3

1:20,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Groundwater (May, 2022)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2022-07-01 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0236-GW_ConcNotification_E2_B.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

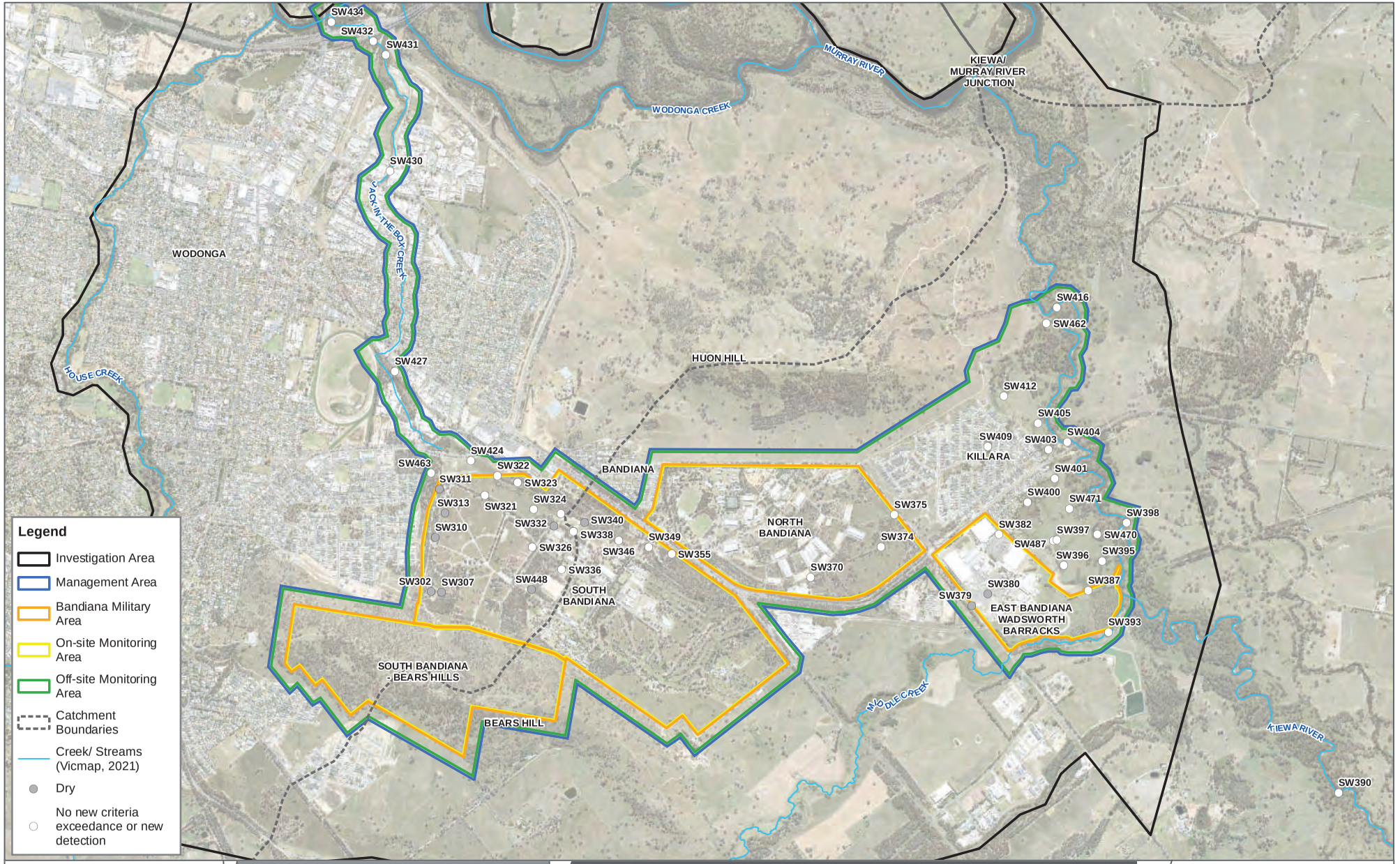


FIGURE 4

1:26,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Surface Water (May, 2022)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno

Map Produced by Cardno VIC
Date: 2022-07-01 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0237-SWConcNotification_E2_B.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

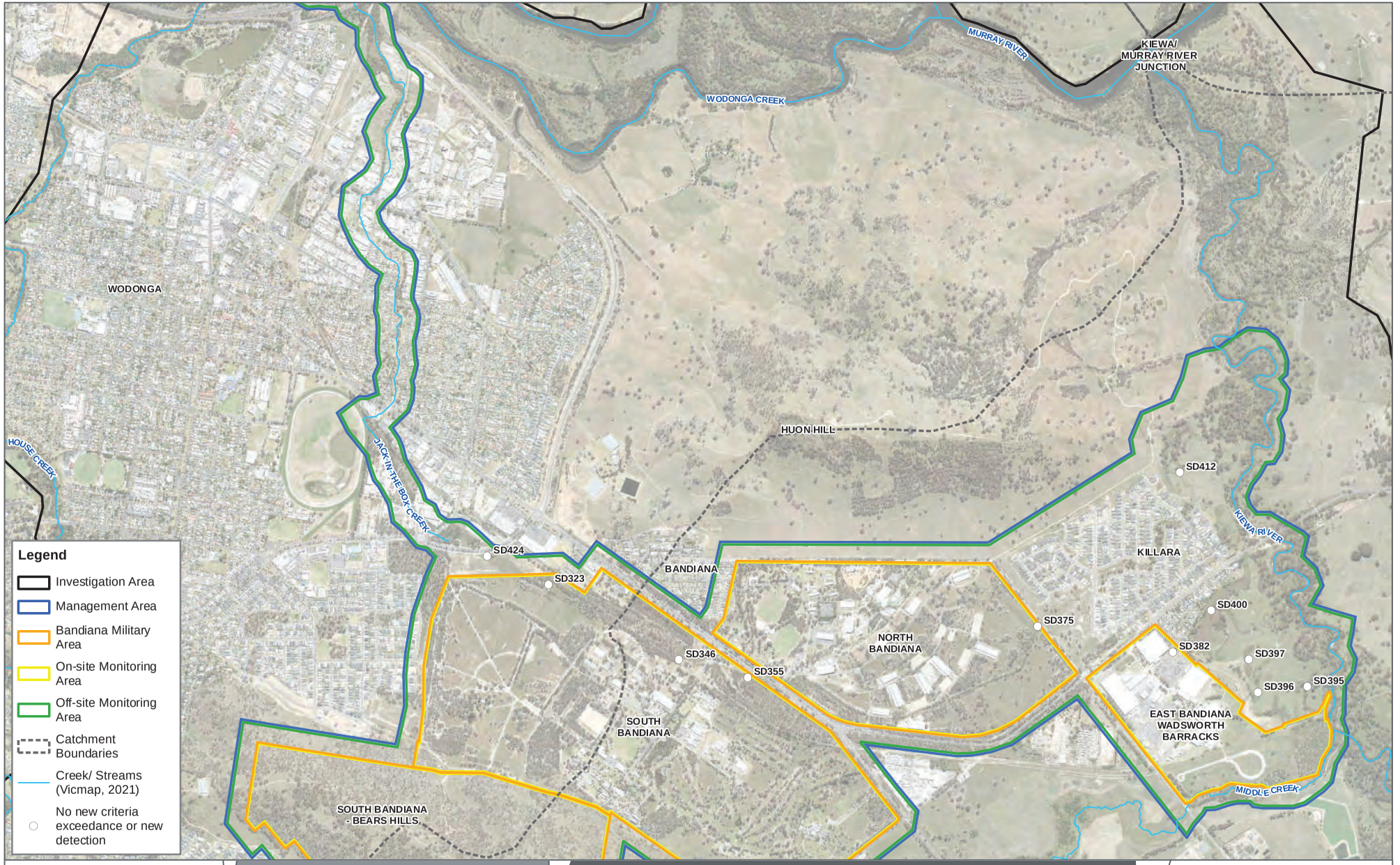


FIGURE 5

1:20,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Sediment (May, 2022)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

N

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2022-07-01 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0238-SED_ConcNotification_E2_B.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

APPENDIX

B

DATA ASSESSMENT TABLES

Location Code	Property	Sampled Date	Field ID	Sample Type	Lab Report Number	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)
						Perfluorocarbons																
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**														
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*														
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220															
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19															
MW009	On-base	28/11/2017	0445E_MW09_S_171128	Normal	ES1730397	3.32	0.45	***9.92***	1.28	1.4	6.6	0.3	<0.02	0.3	0.4	1.85	0.29	<0.02	<0.02	<0.02	<0.02	<0.02
MW009	On-base	16/11/2021	0445_MW009_211116	Normal	EM2122998	2.67	0.43	***6.81***	0.95	0.86	4.14	0.45	<0.02	0.2	0.34	1.36	0.25	<0.02	<0.02	<0.02	<0.02	<0.02
MW009	On-base	5/05/2022	0445_MW009_220505	Normal	EM2208381	3.5	0.44	***9.69***	0.99	1.11	6.19	0.37	<0.02	0.2	0.4	1.32	0.29	<0.02	<0.02	<0.02	<0.02	<0.02
MW012	On-base	28/11/2017	0445E_MW12_S_171128	Normal	ES1730397	0.04	<0.01	**0.3**	<0.02	<0.02	0.26	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW012	On-base	28/11/2017	0445E_QC100_171128	Field_D	ES1730397	0.05	<0.01	**0.37**	<0.02	<0.02	0.32	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW012	On-base	12/11/2021	0445_MW012_211111	Normal	EM2122518	0.07	<0.01	**0.43**	<0.02	<0.02	0.36	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW012	On-base	5/05/2022	0445_MW012_220505	Normal	EM2208381	0.09	<0.01	**0.54**	0.02	0.03	0.45	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW016	On-base	28/11/2017	0445E_MW16_S_171128	Normal	ES1730397	7.35	0.39	***11.6***	0.62	0.66	4.22	0.32	<0.02	0.1	0.2	0.95	0.2	<0.02	<0.02	<0.02	<0.02	<0.02
MW016	On-base	16/11/2021	0445_MW016_211116	Normal	EM2122998	4.38	0.31	***7.42***	0.4	0.4	3.04	0.25	<0.02	<0.1	0.16	0.68	0.15	<0.02	<0.02	<0.02	<0.02	<0.02
MW016	On-base	9/05/2022	0445_MW016_220509	Normal	EM2208649	6.14	0.33	***9.36***	0.45	0.42	3.22	0.27	<0.02	<0.1	0.16	0.61	0.16	<0.02	<0.02	<0.02	<0.02	<0.02
MW018	On-base	28/11/2017	0445E_MW18_S_171128	Normal	ES1730397	0.13	<0.01	**0.31**	0.02	<0.02	0.18	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW018	On-base	16/11/2021	0445_MW018_211116	Normal	EM2122998	0.32	<0.01	**0.67**	0.06	0.05	0.35	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW018	On-base	5/05/2022	0445_MW018_220505	Normal	EM2208381	0.33	<0.01	**0.66**	0.06	0.05	0.33	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW020	On-base	28/11/2017	0445E_MW20_S_171128	Normal	ES1730397	0.72	0.05	***2.34***	0.11	0.14	1.62	0.05	<0.02	<0.1	0.03	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW020	On-base	16/11/2021	0445_MW020_211116	Normal	EM2122998	1.54	0.07	***3.38***	0.15	0.16	1.84	0.09	<0.02	<0.1	0.05	0.23	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
MW020	On-base	3/05/2022	0445_MW020_220503	Normal	EM2208381	1.29	0.06	***2.77***	0.13	0.15	1.48	0.07	<0.02	<0.1	0.05	0.17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW029	On-base	11/12/2017	0445E_MW29_S_171211	Normal	ES1731478	0.38	0.04	**0.87**	0.12	0.11	0.49	<0.02	<0.02	<0.1	0.19	0.22	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
MW029	On-base	11/11/2021	0445_MW029_211111	Normal	EM2122518	0.44	0.06	**1.15**	0.13	0.13	0.71	0.02	<0.02	<0.1	0.16	0.25	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
MW029	On-base	5/05/2022	0445_MW029_220505	Normal	EM2208381	0.64	0.05	**1.28**	0.18	0.14	0.64	<0.02	<0.02	<0.1	0.22	0.29	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
MW034	On-base	28/11/2017	0445E_MW34_S_171128	Normal	ES1730397	0.73	0.06	**1.59**	0.1	0.12	0.86	0.02	<0.02	<0.1	0.04	0.13	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW034	On-base	16/11/2021	0445_MW034_211116	Normal	EM2122998	1.86	0.12	***3.46***	0.26	0.21	1.6	0.13	<0.02	<0.1	0.09	0.34	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
MW034	On-base	3/05/2022	0445_MW034_220503	Normal	EM2208381	1.57	0.06	***2.57***	0.14	0.14	1	0.08	<0.02	<0.1	0.06	0.16	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
MW034	On-base	3/05/2022	0445_QC106_220503	Field_D	EM2208381	1.27	0.06	***2.35***	0.13	0.14	1.08	0.07	<0.02	<0.1	0.05	0.16	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
MW034	On-base	5/05/2022	0445_QC206_220505	Interlab_D	886780	2.1[#1]	0.09[#1]	***3.3***	0.14	0.15[#1]	1.2[#1]	0.06[#1]	<0.01	<0.05	0.05	0.2[#1]	0.04[#1]	<0.01	<0.01	<0.01	<0.01	<0.01
MW035	On-base	28/11/2017	0445E_MW35_S_171128	Normal	ES1730397	3.97	0.54	***12.1***	1.72	1.74	8.16	0.39	<0.02	0.4	0.55	2.4	0.41	<0.02	<0.02	<0.02	<0.02	<0.02
MW035	On-base	16/11/2021	0445_MW035_211116	Normal	EM2122998	3.32	0.45	***7.45***	0.93	0.87	4.13	0.39	<0.02	0.2	0.34	1.41	0.26	<0.02	<0.02	<0.02	<0.02	<0.02
MW035	On-base	3/05/2022	0445_MW035_220503	Normal	EM2208381	5.07	**0.59**	***12.4***	1.16	1.27	7.38	0.49	<0.02	0.2	0.48	1.62	0.35	<0.02	<0.02	<0.02	<0.02	<0.02
MW042	On-base	28/11/2017	0445E_MW42_D_171128	Normal	ES1730397	5.66	**0.7**	***15.4***	1.99	2.07	9.76	0.5	<0.02	0.4	0.64	2.88	0.47	<0.02	<0.02	<0.02	<0.02	<0.02
MW042	On-base	11/11/2021	QC204_211111	Interlab_D	841785	4.3[#1]	**0.65**	***11.3***	1.2	0.96[#1]	7[#1]	0.57	<0.01	0.33	0.36	1.9	0.32	<0.01	<0.01	<0.01	<0.01	<0.01
MW042	On-base	12/11/2021	0445_MW042_211111	Normal	EM2122518	3.61	0.49	***8.66***	0.92	1.13	5.05	0.49	<0.02	0.2	0.35	1.62	0.31	<0.02	<0.02	<0.02	<0.02	<0.02
MW042	On-base	12/11/2021	0445_QC104_211111	Field_D	EM2122518	3.3	0.46	***8.79***	0.99	0.81	5.49	0.38	<0.04[#2]	<0.2[#2]	0.33	1.52	0.24	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW042	On-base	3/05/2022	0445_MW042_220503	Normal	EM2208381	6.03	**0.66**	***15.4***	1.42	1.57	9.35	0.56	<0.02	0.3	0.59	2.02	0.43	<0.02	<0.02	<0.02	<0.02	<0.02
MW043	On-base	28/11/2017	0445E_MW43_I_171128	Normal	ES1730397	10.5	**1.09**	***32***	3.11	3.28	21.5	0.88	<0.02	0.7	1.06	4.85	0.71	<0.02	<0.02	<0.02	<0.02	<0.02
MW043	On-base	16/11/2021	0445_MW043_211116	Normal	EM2122998	5.33	**0.76**	***12.9***	1.6	1.73	7.54	0.81	<0.02	0.4	0.61	2.51	0.43	<0.02	<0.02	<0.02	<0.02	<0.02
MW043	On-base	3/05/2022	0445_MW043_220503	Normal	EM2208381	6.91	**0.7**	***16.6***	1.52	1.63	9.65	0.59	<0.02	0.3	0.64	2.04	0.44	<0.02	<0.02	<0.02	<0.02	<0.02
MW046_D	On-base	28/11/2017	0445E_MW46_D_171128	Normal	ES1730397	2.05	0.14	***4.31***	0.34	0.36	2.26	0.14	<0.02	<0.1	0.12	0.49	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
MW046_D	On-base	3/05/2022	0445_MW046D_220503	Normal	EM2208381	2.88	0.16	***4.97***	0.37	0.3	2.09	0.17	<0.02	<0.1	0.14	0.41	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
MW046_I	On-base	28/11/2017	0445E_MW47_I_171128	Normal	ES1730397	1.99	0.16	***4.27***	0.32	0.35	2.28	0.14	<0.02	<0.1	0.12	0.5	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
MW046_I	On-base	4/05/2022	0445_MW046I_220503	Normal	EM2208381	2.17	0.1	***3.59***	0.2	0.2	1.42	0.11	<0.02	<0.1	0.08	0.24	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
MW052	On-base	1/06/2012	0445E_MW06-A_120601	Normal	ES1213811	1.24	**0.94**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW052	On-base	1/06/2012	0445E_QC103_120601	Field_D	ES1213811	1.18	**0.91**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW052	On-base	7/03/2017	0445_MW06_070307	Normal	163195	6.6	**3.2**	-	-	-	53	-	-	-	-	-	-	-	-	-	-	-
MW052	On-base	11/12/2017	0445E_MW06A_S_171211	Normal	ES1731478	7.17	**1.37**	***26.5***	2.86	3.18	19.3	0.45	<0.02	0.6	1.24	4.23	0.98	<0.02	<0.02	<0.02	<0.02	<0.02
MW052	On-base	16/11/2021	0445_MW052_211116	Normal	EM2122998	7.23	**0.67**	***11***	0.96	0.86	3.81	0.5	<0.02	0.3	0.39	1.6	0.36	<0.02	<0.02	<0.02	<0.02	<0.02
MW052	On-base	5/05/2022	0445_MW052_220505	Normal	EM2208381	9.31	**0.63**	***14.4***	1.31	1.2	5.08	0.32	<0.02	0.3	0.5	2.14	0.61	<0.02	<0.02	<0.02	<0.02	<0.02
MW304	On-base	6/12/2017	0445s_MW304_S_171206	Normal	ES1731108	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW304	On-base	10/11/2021	0445_MW304_211110	Normal	EM2122518	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW304	On-base	4/05/2022	0445_MW304_220504	Normal	EM2208381	0.06	<0.02[#2]	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

											Perfluorocarbons										
											Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)
											µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
										LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water												**0.56**	**0.07**														
PFAS NEMP 2.0 Table 1 Health Recreational Water												*10*	*2*														
PFAS NEMP 2.0 Table 5 Freshwater 95%											0.13	220															
PFAS NEMP 2.0 Table 5 Freshwater 99%											0.00023	19															
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**																						
MW304	On-base	4/05/2022	0445_QC107_220504	Field_D	EM2208381	0.07	<0.02[#2]	**0.12**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW304	On-base	4/05/2022	0445_QC207_220504	Interlab_D	886780	0.1[#1]	<0.01	**0.16**	<0.01	<0.01	0.06[#1]	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW307	On-base	6/12/2017	0445s_MW307_S_171206	Normal	ES1731108	0.25	0.01	**0.37**	0.02	<0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW307	On-base	6/12/2017	0445s_QC110_171206	Field_D	ES1731108	0.25	0.01	**0.35**	<0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW307	On-base	11/11/2021	0445_MW307_211110	Normal	EM2122518	70.4	***34.2***	***422***	87.7	61.2	352	28.4	<0.04[#2]	7.1	57.5	140	23	0.48	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW307	On-base	22/12/2021	0445_MW307_211222	Normal	EM2125903	94.3	***44.2***	***590***	107	97.6	496	41.2	<0.05[#2]	13.4	71.3	170	31.5	0.6	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]
MW307	On-base	22/12/2021	0445_QC101_211222	Field_D	EM2125903	91	***44.8***	***577***	110	85.9	486	38.6	<0.05[#2]	12.4	71	168	32.1	0.6	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]
MW307	On-base	22/12/2021	0445_QC201_211222	Interlab_D	852797	66	**8.9**	***456***	68	74	390	27	<0.01	4.5	16[#1]	39[#1]	9.5	0.15	<0.01	<0.01	<0.01	<0.01	<0.01
MW307	On-base	4/05/2022	0445_MW307_220504	Normal	EM2208381	88.8	***49.4***	***644***	119	115	555	55.6	<0.04[#2]	16.1	72.7	221	35.5	0.62	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW312	On-base	6/12/2017	0445s_MW312_S_171206	Normal	ES1731108	<0.01	<0.01	**0.12**	0.02	0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW312	On-base	10/11/2021	0445_MW312_21110	Normal	EM2122518	0.02	<0.01	**0.16**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW312	On-base	4/05/2022	0445_MW312_220504	Normal	EM2208381	<0.01	<0.01	**0.1**	<0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	7/12/2017	0445N_MW342_S_171207	Normal	ES1731478	<0.01	<0.01	**0.09**	0.03	0.04	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	11/11/2021	0445_MW342_211111	Normal	EM2122518	9.21	0.22	***13.5***	0.88	0.53	4.31	0.36	<0.02	<0.1	0.24	0.95	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	22/12/2021	0445_MW342_211222	Normal	EM2125903	4.15	0.2	***9.15***	0.94	0.78	5	0.36	<0.02	0.1	0.24	1.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	22/12/2021	0445_QC100_211222	Field_D	EM2125903	4.37	0.21	***9.48***	0.89	0.7	5.11	0.37	<0.02	0.1	0.24	1.13	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	22/12/2021	0445_QC200_211222	Interlab_D	852797	5.8[#1]	0.32[#1]	***12.6***	1.1	1[#1]	6.8[#1]	0.41[#1]	<0.01	0.2	0.3[#1]	1.4[#1]	0.09[#1]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW342	On-base	6/05/2022	0445_MW342_220506	Normal	EM2208381	4	0.16	***8.59***	0.68	0.51	4.59	0.26	<0.02	<0.1	0.22	0.81	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	6/05/2022	0445_QC111_220506	Field_D	EM2208381	3.97	0.17	***8.58***	0.74	0.53	4.61	0.26	<0.02	<0.1	0.22	0.75	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	On-base	6/05/2022	0445_QC211_220506	Interlab_D	886780	4.9[#1]	0.21[#1]	***11.3***	0.91	0.75[#1]	6.4[#1]	0.28[#1]	<0.01	0.14	0.19	0.88	0.07[#1]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW345	On-base	7/12/2017	0445N_MW345_S_171207	Normal	ES1731478	0.1	<0.01	**0.3**	<0.02	0.03	0.2	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW345	On-base	17/11/2021	0445_MW345_211117	Normal	EM2122998	0.02	<0.01	**0.25**	0.06	0.05	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW345	On-base	6/05/2022	0445_MW345_220506	Normal	EM2208381	0.03	<0.01	**0.24**	0.04	0.03	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW346	On-base	7/12/2017	0445N_QC212_171207	Normal	577514	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW346	On-base	7/12/2017	0445N_MW346_S_171207	Normal	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW346	On-base	11/12/2017	0445N_QC112_171207	Field_D	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW346	On-base	16/11/2021	0445_MW346_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW346	On-base	6/05/2022	0445_MW346_220506	Normal	EM2208381	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_D	On-base	10/12/2017	0445E_MW350_D_171210	Normal	ES1731478	0.27	0.02	**0.63**	<0.02	0.06	0.36	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_D	On-base	11/11/2021	0445_MW350_D_211111	Normal	EM2122518	0.33	0.02	**0.6**	0.04	0.03	0.27	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_D	On-base	3/05/2022	0445_MW350_D_220503	Normal	EM2208381	0.28	0.02	**0.53**	0.1	0.04	0.25	0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_S	On-base	10/12/2017	0445E_MW350_S_171210	Normal	ES1731478	15.2	**4.24**	***90.2***	7.42	10.4	75	2.02	<0.02	1.9	4.72	14	1.87	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_S	On-base	11/11/2021	QC205_211111	Interlab_D	841785	19[#1]	**2.8**[#1]	***69***	4	5[#1]	50[#1]	2.8[#1]	<0.01	0.95	1.3[#1]	7[#1]	1.1[#1]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW350_S	On-base	11/11/2021	0445_MW350_S_211111	Normal	EM2122518	15.3	**3.05**	***48.7***	3.62	2.6	33.4	2.86	<0.04[#2]	0.6	1.39	5.72	1.16	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW350_S	On-base	11/11/2021	0445_QC105_211111	Field_D	EM2122518	15.2	**3.06**	***48.9***	3.65	2.7	33.7	2.91	<0.04[#2]	0.9	1.45	5.86	1.24	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW350_S	On-base	6/05/2022	0445_MW350_S_220506	Normal	EM2208381	17.8	**2.67**	***43.4***	2.43	2.69	25.6	2.32	<0.02	0.8	1.71	4.45	1.33	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW351	On-base	11/12/2017	0445E_MW351_S_171211	Normal	ES1731478	0.03	<0.01	0.07	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW351	On-base	16/11/2021	0445_MW351_211116	Normal	EM2122998	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW351	On-base	3/05/2022	0445_MW351_220503	Normal	EM2208381	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW351	On-base	3/05/2022	0445_QC100_220503	Field_D	EM2208381	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW351	On-base	3/05/2022	0445_QC200_220503	Interlab_D	886780	0.01[#1]	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW352	On-base	11/12/2017	0445E_MW352_S_171211	Normal	ES1731478	0.02	<0.01	**0.1**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW352	On-base	16/11/2021	0445_MW352_211116	Normal	EM2122998	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW352	On-base	3/05/2022	0445_MW352_220503	Normal	EM2208381	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW353	On-base	11/12/2017	0445E_MW353_S_171211	Normal	ES1731478	3.14	0.32	***8.98***	0.7	0.76	5.84	0.27	<0.02	<0.1	0.26	0.86	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW353	On-base	12/11/2021	0445_MW353_211111	Normal	EM2122518	3.85	0.22	***7.05***	0.46	0.43	3.2	0.26	<0.02	<0.1	0.13	0.53	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW353	On-base	5/05/2022	0445_MW353_220505	Normal	EM2208381	3.1	0.18	***5.93***	0.4	0.4	2.83	0.21	<0.02	<0.1	0.11	0.37	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW354	On-base	11/12/2017	0445E_MW354_S_171211	Normal	ES1731478	0.03	<0.01	**0.17**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

												Perfluorocarbons							
												Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)
												µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
											LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water													**0.56**	**0.07**					
PFAS NEMP 2.0 Table 1 Health Recreational Water													*10*	*2*					
PFAS NEMP 2.0 Table 5 Freshwater 95%												0.13	220						
PFAS NEMP 2.0 Table 5 Freshwater 99%												0.00023	19						
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**														
MW354	On-base	11/12/2017	0445E_QC116_171211	Field_D	ES1731478	0.1	0.01	**0.27**	0.03	0.04	0.17	<0.02	<0.02
MW354	On-base	16/11/2021	0445_MW354_211116	Normal	EM2122998	0.15	0.01	**0.38**	0.04	0.03	0.23	<0.02	<0.02
MW354	On-base	5/05/2022	0445_MW354_220505	Normal	EM2208381	0.11	<0.01	**0.21**	0.03	<0.02	0.1	<0.02	<0.02
MW356	Off-base	9/12/2017	0445_MW356_S_171209	Normal	ES1731468	0.0009	<0.0005	0.0019	<0.0005	<0.0005	0.001	<0.0005	<0.0005
MW356	Off-base	12/11/2021	0445_MW356_211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02
MW356	Off-base	7/05/2022	0445_MW356_220505	Normal	EM2208383	<0.01	<0.01	0.02	<0.02	<0.02	0.02	<0.02	<0.02
MW357	Off-base	9/12/2017	0445_MW357_S_171209	Normal	ES1731468	0.0262	0.0011	**0.111**	0.0082	0.0089	0.0844	0.0018	<0.0005
MW357	Off-base	9/12/2017	0445_QC114_171209	Field_D	ES1731468	0.0254	0.0011	**0.104**	0.0064	0.0097	0.0788	0.0018	<0.0005
MW357	Off-base	12/11/2021	0445_MW357_211112	Normal	EM2122519	0.03	<0.01	0.07	<0.02	<0.02	0.04	<0.02	<0.02
MW357	Off-base	6/05/2022	0445_MW357_220506	Normal	EM2208383	0.01	<0.01	0.04	<0.02	<0.02	0.03	<0.02	<0.02
MW360	Off-base	9/12/2017	0445_MW360_S_171209	Normal	ES1731468	0.0836	0.0009	**0.232**	0.0087	0.0173	0.148	0.0048	<0.0005
MW360	Off-base	11/11/2021	0445_MW360_211111	Normal	EM2122519	0.06	<0.01	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02
MW360	Off-base	6/05/2022	0445_MW360_220506	Normal	EM2208383	0.05	<0.01	**0.11**	<0.02	<0.02	0.06	<0.02	<0.02
MW361	Off-base	9/12/2017	0445_MW361_S_171209	Normal	ES1731468	0.0488	0.0098	**0.296**	0.011	0.0166	0.247	0.0053	<0.0005
MW361	Off-base	9/12/2017	0445_QC115_171209	Field_D	ES1731468	0.0454	0.0099	**0.282**	0.0094	0.0141	0.237	0.005	<0.0005
MW361	Off-base	11/11/2021	0445_MW361_211111	Normal	EM2122519	0.08	0.01	**0.21**	<0.02	<0.02	0.13	<0.02	<0.02
MW361	Off-base	7/05/2022	0445_MW361_220506	Normal	EM2208381	0.07	0.01	**0.21**	0.02	<0.02	0.14	<0.02	<0.02
MW403	On-base	10/12/2017	0445E_BH01_S_171210	Normal	ES1731478	39.4	**3.38**	***96.2***	8.93	9.2	56.8	2.65	<0.02
MW403	On-base	12/11/2021	0445_MW403_211111	Normal	EM2122518	52.3	**4.41**	***93.9***	5.04	5.46	41.6	3.48	<0.04[#2]
MW403	On-base	5/05/2022	0445_MW403_220505	Normal	EM2208381	52.7	**3.42**	***98.7***	5.98	7.17	46	4.26	<0.04[#2]
MW404	On-base	10/12/2017	0445E_BH02_S_171210	Normal	ES1731478	65.7	**6.8**	***118***	9.63	10	52.4	4.29	<0.02
MW404	On-base	11/11/2021	QC203_211111	Interlab_D	841785	47[#1]	**3.4**[#1]	***84***	4.7	4.6[#1]	37[#1]	1.7[#1]	<0.01
MW404	On-base	11/11/2021	0445_QC103_211111	Field_D	EM2122518	40.9	**3.96**	***69.3***	5.33	2.88	28.4	2.75	<0.04[#2]
MW404	On-base	11/11/2021	0445_MW404_211111	Normal	EM2122518	50.2	**3.86**	***81.1***	5.2	3.16	30.9	2.81	<0.04[#2]
MW404	On-base	5/05/2022	0445_MW404_220505	Normal	EM2208381	56.2	**4.02**	***101***	7.16	9.16	45.2	4.18	<0.04[#2]
OTH019	Off-base	31/10/2018	0445_QC220_181031	Interlab_D	625560	0.037[#1]	0.004[#1]	**0.157**	0.01	0.009[#1]	0.12[#1]	0.004[#1]	<0.001
OTH019	Off-base	31/10/2018	0445_OTH019_181031	Normal	ES1832670	0.037	0.0053	**0.171**	0.0095	0.0102	0.134	0.0054	<0.0005
OTH019	Off-base	31/10/2018	0445_QC120_181031	Field_D	ES1832670	0.0375	0.0058	**0.178**	0.01	0.0105	0.141	0.0056	<0.0005
OTH019	Off-base	15/11/2021	0445_OTH019_211115	Normal	EM2122969	0.05	<0.01	**0.18**	<0.02	<0.02	0.13	<0.02	<0.02
OTH019	Off-base	5/05/2022	0445_OTH019_220505	Normal	EM2208348	0.04	<0.01	**0.15**	<0.02	<0.02	0.11	<0.02	<0.02

												Perfluorocarbons							
												Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)				
												µg/L	µg/L	µg/L	µg/L				
											LOR	0.0005	0.0005	0.0005	0.0005				
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**														
MW354	On-base	11/12/2017	0445E_QC116_171211	Field_D	ES1731478	0.03	0.04	0.17	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW354	On-base	16/11/2021	0445_MW354_211116	Normal	EM2122998	0.04	0.03	0.23	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW354	On-base	5/05/2022	0445_MW354_220505	Normal	EM2208381	0.03	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW356	Off-base	9/12/2017	0445_MW356_S_171209	Normal	ES1731468	<0.0005	0.0019	<0.0005	<0.0005	0.001	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW356	Off-base	12/11/2021	0445_MW356_211112	Normal	EM2122519	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW356	Off-base	7/05/2022	0445_MW356_220505	Normal	EM2208383	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW357	Off-base	9/12/2017	0445_MW357_S_171209	Normal	ES1731468	0.0082	0.0089	0.0844	0.0018	<0.0005	<0.002	0.001	0.004	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW357	Off-base	9/12/2017	0445_QC114_171209	Field_D	ES1731468	0.0064	0.0097	0.0788	0.0018	<0.0005	<0.002	0.0006	0.0025	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW357	Off-base	12/11/2021	0445_MW357_211112	Normal	EM2122519	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW357	Off-base	6/05/2022	0445_MW357_220506	Normal	EM2208383	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW360	Off-base	9/12/2017	0445_MW360_S_171209	Normal	ES1731468	0.0087	0.0173	0.148	0.0048	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW360	Off-base	11/11/2021	0445_MW360_211111	Normal	EM2122519	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW360	Off-base	6/05/2022	0445_MW360_220506	Normal	EM2208383	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW361	Off-base	9/12/2017	0445_MW361_S_171209	Normal	ES1731468	0.011	0.0166	0.247	0.0053	<0.0005	<0.002	0.0155	0.0199	0.0096	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW361	Off-base	9/12/2017	0445_QC115_171209	Field_D	ES1731468	0.0094	0.0141	0.237	0.005	<0.0005	<0.002	0.0072	0.0206	0.0093	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW361	Off-base	11/11/2021	0445_MW361_211111	Normal	EM2122519	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW361	Off-base	7/05/2022	0445_MW361_220506	Normal	EM2208381	0.02	<0.02	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW403	On-base	10/12/2017	0445E_BH01_S_171210	Normal	ES1731478	8.93	9.2	56.8	2.65	<0.02	2.2	4.94	14.7	1.87	0.06	<0.02	<0.02	<0.02	<0.02
MW403	On-base	12/11/2021	0445_MW403_211111	Normal	EM2122518	5.04	5.46	41.6	3.48	<0.04[#2]	1.1	2.23	9.86	1.69	0.05	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW403	On-base	5/05/2022	0445_MW403_220505	Normal	EM2208381	5.98	7.17	46	4.26	<0.04[#2]	1.3	2.4	11.2	1.66	0.06	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW404	On-base	10/12/2017	0445E_BH02_S_171210	Normal	ES1731478	9.63	10	52.4	4.29	<0.02	1.9	5.15	12.3	3.38	0.03	<0.02	<0.02	<0.02	<0.02
MW404	On-base	11/11/2021	QC203_211111	Interlab_D	841785	4.7	4.6[#1]	37[#1]	1.7[#1]	<0.01	0.96	1.4	6.9	1.6[#1]	0.02	<0.01	<0.01	<0.01	<0.01
MW404	On-base	11/11/2021	0445_QC103_211111	Field_D	EM2122518	5.33	2.88	28.4	2.75	<0.04[#2]	1.1	1.74	7.32	1.86	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW404	On-base	11/11/2021	0445_MW404_211111	Normal	EM2122518	5.2	3.16	30.9	2.81	<0.04[#2]	0.8	1.66	7.59	1.73	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
MW404	On-base	5/05/2022	0445_MW404_220505	Normal	EM2208381	7.16	9.16	45.2	4.18	<0.04[#2]	1.2	2.63	13.3	2.8	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]	<0.04[#2]
OTH019	Off-base	31/10/2018	0445_QC220_181031	Interlab_D	625560	0.01	0.009[#1]	0.12[#1]	0.004[#1]	<0.001	<0.005	<0.001	0.005[#1]	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
OTH019	Off-base	31/10/2018	0445_OTH019_181031	Normal	ES1832670	0.0095	0.0102	0.134	0.0054	<0.0005	<0.002	<0.0005	0.0056	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
OTH019	Off-base	31/10/2018	0445_QC120_181031	Field_D	ES1832670	0.01	0.0105	0.141	0.0056	<0.0005	<0.002	<0.0005	0.0054	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
OTH019	Off-base	15/11/2021	0445_OTH019_211115	Normal	EM2122969	0.13	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
OTH019	Off-base	5/05/2022	0445_OTH019_220505	Normal	EM2208348	0.11	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

Data Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

#2 Reported Analyte LOR is higher than Requested Analyte LOR

						Perfluorocarbons													
						Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**														
MW009	On-base	28/11/2017	0445E_MW09_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.2	-
MW009	On-base	16/11/2021	0445_MW009_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.6	-
MW009	On-base	5/05/2022	0445_MW009_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	14.9	-
MW012	On-base	28/11/2017	0445E_MW12_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.3	-
MW012	On-base	28/11/2017	0445E_QC100_171128	Field_D	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37	-
MW012	On-base	12/11/2021	0445_MW012_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.43	-
MW012	On-base	5/05/2022	0445_MW012_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.62	-
MW016	On-base	28/11/2017	0445E_MW16_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15	-
MW016	On-base	16/11/2021	0445_MW016_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.77	-
MW016	On-base	9/05/2022	0445_MW016_220509	Normal	EM2208649	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.8	-
MW018	On-base	28/11/2017	0445E_MW18_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-
MW018	On-base	16/11/2021	0445_MW018_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	-
MW018	On-base	5/05/2022	0445_MW018_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77	-
MW020	On-base	28/11/2017	0445E_MW20_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.91	-
MW020	On-base	16/11/2021	0445_MW020_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.16	-
MW020	On-base	3/05/2022	0445_MW020_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.42	-
MW029	On-base	11/12/2017	0445E_MW29_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.61	-
MW029	On-base	11/11/2021	0445_MW029_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.98	-
MW029	On-base	5/05/2022	0445_MW029_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.26	-
MW034	On-base	28/11/2017	0445E_MW34_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.08	-
MW034	On-base	16/11/2021	0445_MW034_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.67	-
MW034	On-base	3/05/2022	0445_MW034_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.25	-
MW034	On-base	3/05/2022	0445_QC106_220503	Field_D	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.99	-
MW034	On-base	5/05/2022	0445_QC206_220505	Interlab_D	886780	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	4.09	0.00339
MW035	On-base	28/11/2017	0445E_MW35_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	20.4	-
MW035	On-base	16/11/2021	0445_MW035_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3	-
MW035	On-base	3/05/2022	0445_MW035_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	18.7	-
MW042	On-base	28/11/2017	0445E_MW42_D_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	25.3	-
MW042	On-base	11/11/2021	QC204_211111	Interlab_D	841785	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	0.09	<0.01	<0.01	18.21	0.01195
MW042	On-base	12/11/2021	0445_MW042_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	14.2	-
MW042	On-base	12/11/2021	0445_QC104_211111	Field_D	EM2122518	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.00009[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.04[#2]	<0.05	0.05	<0.05	<0.05	13.6	-
MW042	On-base	3/05/2022	0445_MW042_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	23.1	-
MW043	On-base	28/11/2017	0445E_MW43_I_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.46	<0.05	<0.05	48.1	-
MW043	On-base	16/11/2021	0445_MW043_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	21.9	-
MW043	On-base	3/05/2022	0445_MW043_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.24	<0.05	<0.05	24.7	-
MW046_D	On-base	28/11/2017	0445E_MW46_D_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	6.08	-
MW046_D	On-base	3/05/2022	0445_MW046D_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	6.7	-
MW046_I	On-base	28/11/2017	0445E_MW47_I_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	6.04	-
MW046_I	On-base	4/05/2022	0445_MW046I_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.58	-
MW052	On-base	1/06/2012	0445E_MW06-A_120601	Normal	ES1213811	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-
MW052	On-base	1/06/2012	0445E_QC103_120601	Field_D	ES1213811	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-
MW052	On-base	7/03/2017	0445_MW06_070307	Normal	163195	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-
MW052	On-base	11/12/2017	0445E_MW06A_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	41.4	-
MW052	On-base	16/11/2021	0445_MW052_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.7	-
MW052	On-base	5/05/2022	0445_MW052_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	21.4	-
MW304	On-base	6/12/2017	0445s_MW304_S_171206	Normal	ES1731108	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW304	On-base	10/11/2021	0445_MW304_211110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW304	On-base	4/05/2022	0445_MW304_220504	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-

										Perfluorocarbons									
										Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
										µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
									LOR	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**														
MW304	On-base	4/05/2022	0445_QC107_220504	Field_D	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-
MW304	On-base	4/05/2022	0445_QC207_220504	Interlab_D	886780	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.16	0.00016
MW307	On-base	6/12/2017	0445s_MW307_S_171206	Normal	ES1731108	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	-
MW307	On-base	6/12/2017	0445s_QC110_171206	Field_D	ES1731108	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41	-
MW307	On-base	11/11/2021	0445_MW307_211110	Normal	EM2122518	<0.09 #2	<0.04 #2	<0.09 #2	<0.00009 #2	<0.09 #2	<0.09 #2	<0.04 #2	<0.04 #2	0.9	65.4	<0.05	<0.05	928	-
MW307	On-base	22/12/2021	0445_MW307_211222	Normal	EM2125903	<0.14 #2	<0.05 #2	<0.14 #2	<0.00014 #2	<0.14 #2	<0.14 #2	<0.05 #2	<0.05 #2	0.9	100	<0.05	<0.05	1270	-
MW307	On-base	22/12/2021	0445_QC101_211222	Field_D	EM2125903	<0.13 #2	<0.05 #2	<0.13 #2	<0.00013 #2	<0.13 #2	<0.13 #2	<0.05 #2	<0.05 #2	0.91	102	<0.05	<0.05	1240	-
MW307	On-base	22/12/2021	0445_QC201_211222	Interlab_D	852797	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	0.33	26	<0.01	<0.01	774.38	0.4649
MW307	On-base	4/05/2022	0445_MW307_220504	Normal	EM2208381	<0.09 #2	<0.04 #2	<0.09 #2	<0.00009 #2	<0.09 #2	<0.09 #2	<0.04 #2	<0.04 #2	1.1	116	<0.05	<0.05	1440	-
MW312	On-base	6/12/2017	0445s_MW312_S_171206	Normal	ES1731108	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-
MW312	On-base	10/11/2021	0445_MW312_21110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-
MW312	On-base	4/05/2022	0445_MW312_220504	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
MW342	On-base	7/12/2017	0445N_MW342_S_171207	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.2	-
MW342	On-base	11/11/2021	0445_MW342_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.8	-
MW342	On-base	22/12/2021	0445_MW342_211222	Normal	EM2125903	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13	-
MW342	On-base	22/12/2021	0445_QC100_211222	Field_D	EM2125903	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.2	-
MW342	On-base	22/12/2021	0445_QC200_211222	Interlab_D	852797	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	17.88	0.01292
MW342	On-base	6/05/2022	0445_MW342_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.3	-
MW342	On-base	6/05/2022	0445_QC111_220506	Field_D	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.3	-
MW342	On-base	6/05/2022	0445_QC211_220506	Interlab_D	886780	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	15.27	0.01151
MW345	On-base	7/12/2017	0445N_MW345_S_171207	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-
MW345	On-base	17/11/2021	0445_MW345_211117	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-
MW345	On-base	6/05/2022	0445_MW345_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	-
MW346	On-base	7/12/2017	0445N_QC212_171207	Normal	577514	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	-
MW346	On-base	7/12/2017	0445N_MW346_S_171207	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW346	On-base	11/12/2017	0445N_QC112_171207	Field_D	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW346	On-base	16/11/2021	0445_MW346_211117	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW346	On-base	6/05/2022	0445_MW346_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW350_D	On-base	10/12/2017	0445E_MW350_D_171210	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.79	-
MW350_D	On-base	11/11/2021	0445_MW350_D_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77	-
MW350_D	On-base	3/05/2022	0445_MW350_D_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.75	-
MW350_S	On-base	10/12/2017	0445E_MW350_S_171210	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.42	<0.05	<0.05	137	-
MW350_S	On-base	11/11/2021	QC205_211111	Interlab_D	841785	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	0.43	<0.01	<0.01	95.78	0.0718
MW350_S	On-base	11/11/2021	0445_MW350_S_211111	Normal	EM2122518	<0.09 #2	<0.04 #2	<0.09 #2	<0.00009 #2	<0.09 #2	<0.09 #2	<0.04 #2	<0.04 #2	<0.05	0.37	<0.05	<0.05	70.1	-
MW350_S	On-base	11/11/2021	0445_QC105_211111	Field_D	EM2122518	<0.09 #2	<0.04 #2	<0.09 #2	<0.00009 #2	<0.09 #2	<0.09 #2	<0.04 #2	<0.04 #2	<0.05	0.29	<0.05	<0.05	71	-
MW350_S	On-base	6/05/2022	0445_MW350_S_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	1.22	<0.05	<0.05	63	-
MW351	On-base	11/12/2017	0445E_MW351_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
MW351	On-base	16/11/2021	0445_MW351_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW351	On-base	3/05/2022	0445_MW351_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW351	On-base	3/05/2022	0445_QC100_220503	Field_D	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW351	On-base	3/05/2022	0445_QC200_220503	Interlab_D	886780	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.00002
MW352	On-base	11/12/2017	0445E_MW352_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
MW352	On-base	16/11/2021	0445_MW352_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-
MW352	On-base	3/05/2022	0445_MW352_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-
MW353	On-base	11/12/2017	0445E_MW353_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3	-
MW353	On-base	12/11/2021	0445_MW353_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.19	-
MW353	On-base	5/05/2022	0445_MW353_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.69	-
MW354	On-base	11/12/2017	0445E_MW354_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-

Location Code	Property	Sampled Date	Field ID	Sample Type	Lab Report Number	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						Perfluorocarbons													
						µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
MW354	On-base	11/12/2017	0445E_QC116_171211	Field_D	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38	-
MW354	On-base	16/11/2021	0445_MW354_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.5	-
MW354	On-base	5/05/2022	0445_MW354_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
MW356	Off-base	9/12/2017	0445_MW356_S_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0019	-
MW356	Off-base	12/11/2021	0445_MW356_211112	Normal	EM2122519	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW356	Off-base	7/05/2022	0445_MW356_220505	Normal	EM2208383	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW357	Off-base	9/12/2017	0445_MW357_S_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.136	-
MW357	Off-base	9/12/2017	0445_QC114_171209	Field_D	ES1731468	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.127	-
MW357	Off-base	12/11/2021	0445_MW357_211112	Normal	EM2122519	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
MW357	Off-base	6/05/2022	0445_MW357_220506	Normal	EM2208383	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-
MW360	Off-base	9/12/2017	0445_MW360_S_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.263	-
MW360	Off-base	11/11/2021	0445_MW360_211111	Normal	EM2122519	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
MW360	Off-base	6/05/2022	0445_MW360_220506	Normal	EM2208383	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	-
MW361	Off-base	9/12/2017	0445_MW361_S_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.386	-
MW361	Off-base	9/12/2017	0445_QC115_171209	Field_D	ES1731468	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.36	-
MW361	Off-base	11/11/2021	0445_MW361_211111	Normal	EM2122519	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-
MW361	Off-base	7/05/2022	0445_MW361_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
MW403	On-base	10/12/2017	0445E_BH01_S_171210	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	1.01	0.05	<0.05	145	-
MW403	On-base	12/11/2021	0445_MW403_211111	Normal	EM2122518	<0.1[#2]	<0.04[#2]	<0.1[#2]	<0.0001[#2]	<0.1[#2]	<0.1[#2]	<0.04[#2]	<0.04[#2]	<0.05	1.41	<0.05	<0.05	129	-
MW403	On-base	5/05/2022	0445_MW403_220505	Normal	EM2208381	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.00009[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.04[#2]	<0.05	0.95	<0.05	<0.05	137	-
MW404	On-base	10/12/2017	0445E_BH02_S_171210	Normal	ES1731478	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.12	<0.05	<0.05	172	-
MW404	On-base	11/11/2021	QC203_211111	Interlab_D	841785	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	0.08	<0.01	<0.01	110.86	0.0874
MW404	On-base	11/11/2021	0445_QC103_211111	Field_D	EM2122518	<0.11[#2]	<0.04[#2]	<0.11[#2]	<0.00011[#2]	<0.11[#2]	<0.11[#2]	<0.04[#2]	<0.04[#2]	<0.05	0.06	<0.05	<0.05	96.3	-
MW404	On-base	11/11/2021	0445_MW404_211111	Normal	EM2122518	<0.1[#2]	<0.04[#2]	<0.1[#2]	<0.0001[#2]	<0.1[#2]	<0.1[#2]	<0.04[#2]	<0.04[#2]	<0.05	0.06	<0.05	<0.05	108	-
MW404	On-base	5/05/2022	0445_MW404_220505	Normal	EM2208381	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.00009[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.04[#2]	<0.05	<0.05	<0.05	<0.05	146	-
OTH019	Off-base	31/10/2018	0445_QC220_181031	Interlab_D	625560	<0.001	0.005[#1]	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.194	0.000161
OTH019	Off-base	31/10/2018	0445_OTH019_181031	Normal	ES1832670	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.208	-
OTH019	Off-base	31/10/2018	0445_QC120_181031	Field_D	ES1832670	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.217	-
OTH019	Off-base	15/11/2021	0445_OTH019_211115	Normal	EM2122969	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18	-
OTH019	Off-base	5/05/2022	0445_OTH019_220505	Normal	EM2208348	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

Data Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding lir

#2 Reported Analyte LOR is higher than Requested Analyte LOR

						Perfluorocarbons																		
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																	
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**																			
SW307	On-base	17/11/2021	0445_SW307_211117	Normal	EM2122998	0.07	<0.01	**0.17**	<0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW310	On-base	17/11/2021	0445_SW310_211117	Normal	EM2122998	0.11	<0.01	**0.32**	<0.02	<0.02	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW311	On-base	17/11/2021	0445_SW311_211117	Normal	EM2122998	1.75	0.03	***2.16***	0.03	0.02	0.41	0.03	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW313	On-base	17/11/2021	0445_QC111_211117	Field_D	EM2122998	3.85	0.3	***5.13***	0.1	0.07	1.28	0.06	<0.02	0.1	0.33	0.48	0.11	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW313	On-base	17/11/2021	0445_QC211_211117	Interlab_D	842787	4.5[#1]	0.35	***6.1***	0.08	0.08	1.6[#1]	0.08	<0.01	0.23	0.32	0.53	0.12	0.18	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW313	On-base	17/11/2021	0445_SW313_211117	Normal	EM2122998	3.13	0.3	***4.43***	0.1	0.06	1.3	0.07	<0.02	0.1	0.31	0.44	0.11	0.18	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW316	On-base	17/10/2017	0445S_SW316_0.1_171017	Normal	ES1726190	0.722	0.014	**1.11**	0.0242	0.0306	0.388	0.0232	0.002	<0.002	0.008	0.0418	0.0062	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW316	On-base	17/11/2021	0445_SW316_211117	Normal	EM2122998	0.52	0.02	**1.02**	0.04	0.03	0.5	0.02	<0.02	<0.1	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW316	On-base	16/05/2022	0445S_SW316_220516	Normal	EM2209833	0.14	<0.01	**0.23**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW321	On-base	17/11/2021	0445_QC112_211117	Field_D	EM2122998	3.88	0.08	***6.24***	0.18	0.17	2.36	0.1	<0.02	<0.1	0.05	0.36	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW321	On-base	17/11/2021	0445_QC212_211117	Interlab_D	842787	7.5[#1]	0.11	***10.3***	0.18	0.26	2.8[#1]	0.13	<0.01	0.06	0.06	0.45	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW321	On-base	17/11/2021	0445_SW321_211117	Normal	EM2122998	3.48	0.09	***5.8***	0.16	0.16	2.32	0.1	<0.02	<0.1	0.06	0.35	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW321	On-base	4/05/2022	0445_SW321_220504	Normal	EM2208381	6.13	0.05	***7.09***	0.05	0.05	0.96	0.1	<0.02	<0.1	0.02	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW322	On-base	17/11/2021	0445_SW322_211117	Normal	EM2122998	2.38	0.07	***4.48***	0.16	0.16	2.1	0.08	<0.02	<0.1	0.05	0.31	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW322	On-base	4/05/2022	0445_SW322_220504	Normal	EM2208381	6.97	0.06	***8.01***	0.04	0.06	1.04	0.11	<0.02	<0.1	0.02	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW323	On-base	17/10/2017	0445S_SW323_0.2_171017	Normal	ES1726190	1.13	0.0304	**1.42**	0.0212	0.0278	0.287	0.0212	0.0044	<0.002	0.024	0.0652	0.021	0.0094	0.0032	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW323	On-base	17/11/2021	0445_SW323_211117	Normal	EM2122998	0.66	0.03	**0.94**	0.02	<0.02	0.28	<0.02	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW323	On-base	4/05/2022	0445_SW323_220504	Normal	EM2208381	0.65	0.02	**0.85**	0.03	<0.02	0.2	<0.02	<0.02	<0.1	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW324	On-base	20/10/2017	0445S_SW324_0.1_171020	Normal	ES1726682	1.53	0.155	***2.03***	0.0759	0.13	0.496	0.0823	<0.0005	<0.002	0.114	0.139	0.0654	0.0372	0.0075	0.0022	<0.0005	<0.0005	<0.0005	<0.0005
SW324	On-base	17/11/2021	0445_QC110_211117	Field_D	EM2122998	1.61	0.08	***2.23***	0.06	0.04	0.62	0.03	<0.02	<0.1	0.1	0.15	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW324	On-base	17/11/2021	0445_QC210_211117	Interlab_D	842787	2.6[#1]	0.11	***3.6***	0.05	0.06	1	0.05	0.01	0.1	0.11	0.21	0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW324	On-base	17/11/2021	0445_SW324_211117	Normal	EM2122998	1.86	0.1	***2.61***	0.06	0.05	0.75	0.04	<0.02	<0.1	0.1	0.17	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW324	On-base	4/05/2022	0445_SW324_220504	Normal	EM2208381	0.96	0.03	**1.2**	<0.02	<0.02	0.24	<0.02	<0.02	<0.1	0.04	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW326	On-base	17/11/2021	0445_SW326_211117	Normal	EM2122998	7.99	0.38	***10.1***	0.22	0.19	2.14	0.22	0.07	0.2	0.37	0.63	0.19	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW326	On-base	4/05/2022	0445_SW326_220504	Normal	EM2208381	0.6	0.01	**0.69**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW332	On-base	17/10/2017	0445S_SW332_0.05_171017	Normal	ES1726190	3.98	0.0496	***4.45***	0.149	0.0898	0.472	0.0436	0.0244	0.032	0.161	0.419	0.0302	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW332	On-base	17/11/2021	0445_SW332_211117	Normal	EM2122998	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW333	On-base	17/10/2017	0445S_SW333_0.05_171017	Normal	ES1726190	0.444	0.0136	**0.577**	0.0148	0.0162	0.133	0.009	<0.002[#2]	<0.002	0.0042	0.036	0.006	0.0028	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW333	On-base	17/11/2021	0445_SW333_211117	Normal	EM2122998	0.44	0.03	**0.84**	0.07	0.05	0.4	<0.02	<0.02	<0.1	0.07	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW333	On-base	4/05/2022	0445_SW333_220504	Normal	EM2208381	0.11	<0.01	**0.13**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW336	On-base	18/10/2017	0445S_QC267_171018	Interlab_D	569078	48	**1.2**	***50.7***	0.22	0.34	2.7	0.4	0.009	0.32	0.75	2.8	0.44	0.47	0.34	0.058	0.011	<0.001	<0.001	
SW336	On-base	18/10/2017	0445S_QC167_171018	Field_D	ES1726433	17.6	**0.85**	***19.8***	0.172	0.288	2.18	0.298	0.0452	0.044	0.352	1.93	0.324	0.347	0.137	0.0148	<0.002[#2]	<0.002[#2]	<0.005[#2]	
SW336	On-base	18/10/2017	0445S_SW336_0.1_171018	Normal	ES1726433	17.2	**0.899**	***19.6***	0.178	0.306	2.45	0.31	0.0396	0.055	0.446	2.3	0.382	0.348	0.136	0.0128	<0.002[#2]	<0.002[#2]	<0.005[#2]	
SW336	On-base	15/11/2021	0445_SW336_211115	Normal	EM2122998	7.29	0.2	***7.71***	0.06	0.05	0.42	0.05	0.19	<0.1	0.1	0.26	0.1	0.15	0.16	0.1	0.02	<0.02	<0.05	
SW336	On-base	4/05/2022	0445_SW336_220504	Normal	EM2208381	7.64	0.35	***8.18***	0.14	0.11	0.54	0.04	0.96	<0.2[#2]	0.44	0.95	0.25	0.16	0.14	0.23	0.24	0.08	<0.09[#2]	
SW338	On-base	18/10/2017	0445S_SW338_0.2_171018	Normal	ES1726433	3.94	0.224	***5.28***	0.202	0.21	1.34	0.111	0.0042	0.024	0.179	0.806	0.0998	0.0276	0.0048	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]	
SW338	On-base	10/11/2021	0445_SW338_211109	Normal	EM2122518	1.06	0.05	**1.31**	0.09	0.03	0.25	<0.02	<0.02	<0.1	0.04	0.16	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW338	On-base	4/05/2022	0445_SW338_220504	Normal	EM2208381	0.76	0.04	**1**	0.03	0.03	0.24	<0.02	<0.02	<0.1	0.04	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW340	On-base	18/10/2017	0445S_SW340_0.03_171018	Normal	ES1726433	5.59	0.333	***6.8***	0.134	0.158	1.21	0.096	0.0332	0.039	0.258	0.488	0.236	0.0956	0.0496	0.0144	0.0024	<0.002[#2]	<0.005[#2]	
SW340	On-base	10/11/2021	0445_SW340_211109	Normal	EM2122518	4.2	0.15	***5.86***	0.26	0.21	1.66	0.11	<0.02	0.2	0.28	0.44	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW346	On-base	12/10/2017	0445S_SW346_0.2_171013	Normal	ES1725991	1.42	0.0634	**1.95**	0.0841	0.0844	0.526	0.0294	<0.0005	<0.002	0.11	0.15	0.0496	0.0206	0.0068	0.0014	<0.0005	<0.0005	<0.0005	
SW346	On-base	17/11/2021	0445_SW346_211117	Normal	EM2122998	0.73	0.04	**0.94**	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.07	0.08	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW346	On-base	4/05/2022	0445_SW346_220504	Normal	EM2208381	0.69	0.04	**0.86**	0.04	<0.02	0.17	<0.02	<0.02	<0.1	0.04	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW349	On-base	12/10/2017	0445S_QC159_171012	Field_D	ES1725991	0.854	0.0616	**1.33**	0.112	0.0908	0.479	0.0227	<0.0005	<0.002	0.124	0.166	0.0475	0.0164	0.0033	0.0009	<0.0005	<0.0005	<0.0005	
SW349	On-base	13/10/2017	0445S_SW349_0.5_171013	Normal	ES1725991	0.95	0.0476	**1.51**	0.104	0.0845	0.56	0.0216	<0.0005	<0.002	0.112	0.15	0.0399	0.012	0.0026	0.0007	<0.0005	<0.0005	<0.0005	
SW349	On-base	15/11/2021	0445_QC206_211115	Interlab_D	842787	0.84	0.05	**1.06**	0.04	0.03	0.22	0.01	<0.01	0.08	0.07	0.1	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW349	On-base	16/11/2021	0445_QC106_211115	Field_D	EM2122998	0.55	0.04	**0.73**	0.05	0.02	0.18	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW349	On-base	16/11/2021	0445_SW349_211115	Normal	EM2122998	0.61	0.04	**0.82**	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW349	On-base	4/05/2022	0445_SW349_220504	Normal	EM2208381	0.48	0.02	**0.61**	0.03	<0.02	0.13	<0.02	<0.02	<0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW355	On-base	13/10/2017	0445S_SW355_0.5_171013	Normal	ES1725991	0.325	0.0133	**0.533**	0.143	0.0294	0.208	0.0065	<0.0005	<0.002	0.0279	0.042	0.0111	0.0039	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	
SW355	On-base	16/11/2021	0445_QC107_211117	Field_D	EM2122998	0.21	0.02	**0.29**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW355	On-base	17/11/2021	0445_QC207_211117	Interlab_D	842787	0.29	0.02	**0.39**	0.02	0.01	0.1	<0.01	<0.01	<0.05	0.03	0.04	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW355	On-base	17/11/2021	0445_SW355_211117	Normal	EM2122998	0.22	0.01	**0.3**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW355	On-base	4/05/2022	0445_QC204_220504	Interlab_D	886780	0.27[#1]	<0.01	**0.32**	0.01	<0.01	0.05[#1]	<0.01	<0.01	<0.05	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW355	On-base	4/05/2022	0445_SW355_220504	Normal	EM2208381	0.11	<0.01	**0.13**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW355	On-base	7/05/2022	0445_QC104_220504	Field_D	EM2208381	0.19	0.01	**0.24**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW370	On-base	23/10/2017	0445N_SW370_0.01_171023	Normal	ES1726698	0.166	0.0213	**0.326**	0.0255	0.0591	0.16	0.0121	<0.0005	0.018	0.0284	0.0307	0.0176	0.0069	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	
SW370	On-base	17/11/2021	0445_SW370_211117	Normal	EM2122998	0.22	0.01	**0.3**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW370	On-base	6/05/2022	0445_SW370_220506	Normal	EM2208381	0.1	<0.01	**0.13**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

						Perfluorocarbons																
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**														
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*														
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220															
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19															
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**																	
SW374	On-base	23/10/2017	0445N_SW374_0.1_171023	Normal	ES1726698	0.201	0.0228	**0.34**	0.0293	0.0378	0.139	0.0108	<0.0005	<0.002	0.0294	0.0324	0.0156	0.0057	0.001	<0.0005	<0.0005	<0.0005	<0.0005
SW374	On-base	17/11/2021	0445_SW374_211117	Normal	EM2122998	0.13	<0.01	**0.17**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW374	On-base	6/05/2022	0445_SW374_220506	Normal	EM2208381	0.05	<0.01	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW375	On-base	23/10/2017	0445N_QC228_171023	Interlab_D	569535	0.19[#1]	0.015[#1]	**0.29**	0.021	0.013[#1]	0.1[#1]	0.003	<0.001	0.019	0.035[#1]	0.039[#1]	0.012[#1]	0.003	0.001	<0.001	<0.001	<0.001	<0.001
SW375	On-base	23/10/2017	0445N_QC128_171023	Field_D	ES1726698	0.166	0.019	**0.294**	0.0274	0.0267	0.128	0.0089	<0.0005	0.019	0.0232	0.0267	0.0156	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW375	On-base	23/10/2017	0445N_SW375_0.1_171023	Normal	ES1726698	0.15	0.0197	**0.27**	0.0227	0.0245	0.12	0.0092	<0.0005	0.015	0.0253	0.0317	0.0162	0.0046	0.0012	<0.0005	<0.0005	<0.0005	<0.0005
SW375	On-base	1/08/2018	0445_QC205_180801	Interlab_D	611290	0.07[#1]	0.006[#1]	**0.101**	0.004	0.003[#1]	0.031[#1]	0.002[#1]	<0.001	0.006	0.005	0.012[#1]	0.005[#1]	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SW375	On-base	1/08/2018	0445_QC105_180801	Field_D	ES1823003	0.0623	0.0075	**0.104**	0.0068	0.0038	0.0415	0.0019	<0.0005	<0.002	<0.0005	0.0089	0.0053	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW375	On-base	1/08/2018	0445_SW375_0.2_180801	Normal	ES1823003	0.0644	0.0074	**0.106**	0.0046	0.0029	0.0419	0.0016	<0.0005	<0.002	0.0025	0.0101	0.0076	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW375	On-base	17/11/2021	0445_SW375_211117	Normal	EM2122998	0.09	<0.01	**0.15**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW375	On-base	6/05/2022	0445_SW375_220506	Normal	EM2208381	0.06	<0.01	**0.08**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW379	On-base	16/11/2021	0445_SW379_21116	Normal	EM2122998	0.41	0.02	**0.58**	0.15	0.04	0.17	<0.02	0.02	0.1	0.07	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW380	On-base	10/11/2021	0445_SW380_211108	Normal	EM2122518	0.34	<0.01	**0.43**	0.06	0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW382	On-base	24/10/2017	0445E_QC131_171024	Field_D	ES1726816	0.101	0.0039	**0.12**	0.0066	0.0043	0.0187	0.0026	<0.0005	<0.002	0.0064	0.0155	0.0028	0.0008	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
SW382	On-base	24/10/2017	0445E_SW382_0.1_171024	Normal	ES1726816	0.107	0.0042	**0.13**	0.0074	0.0046	0.0225	0.0026	<0.0005	<0.002	0.0061	0.0157	0.0028	0.0008	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
SW382	On-base	16/11/2021	0445_QC109_211116	Field_D	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW382	On-base	16/11/2021	0445_QC209_211116	Interlab_D	842787	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW382	On-base	17/11/2021	0445_SW382_211116	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW382	On-base	3/05/2022	0445_SW382_220503	Normal	EM2208381	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW387	On-base	25/10/2017	0445E_SW387_0.2_171025	Normal	ES1726955	0.053	0.0038	**0.157**	0.0273	0.0157	0.104	0.0045	<0.0005	<0.002	0.003	0.0074	0.0021	0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
SW387	On-base	16/11/2021	0445_SW387_211116	Normal	EM2122998	0.06	<0.01	**0.21**	0.03	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW387	On-base	3/05/2022	0445_QC101_220503	Field_D	EM2208381	0.04	<0.01	**0.12**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW387	On-base	3/05/2022	0445_QC201_220503	Interlab_D	886780	0.04[#1]	<0.01	**0.1**	0.01	<0.01	0.06[#1]	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW387	On-base	3/05/2022	0445_SW387_220503	Normal	EM2208381	0.05	<0.01	**0.1**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW388	On-base	25/10/2017	0445E_SW388_0.2_171025	Normal	ES1726955	0.175	0.0046	**0.343**	0.0326	0.02	0.168	0.0054	<0.002[#2]	<0.002	<0.002[#2]	0.0102	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW388	On-base	16/11/2021	0445_SW388_211116	Normal	EM2122998	0.28	<0.01	**0.48**	0.04	<0.02	0.2	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW388	On-base	16/05/2022	0445S_SW388_220516	Normal	EM2209833	0.25	0.02	**0.84**	0.1	0.07	0.59	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW390	Off-base	13/10/2017	0445_SW390_0.5_171013	Normal	ES1725997	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW390	Off-base	31/07/2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW390	Off-base	26/11/2018	0445_SW390_0.5_181126	Normal	ES1835585	0.0005	<0.0005	0.001	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW390	Off-base	9/11/2021	0445_SW390_211109	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW390	Off-base	5/05/2022	0445_SW390_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW393	Off-base	16/10/2017	0445_SW393_0.1_171016	Normal	ES1726004	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW393	Off-base	1/08/2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW393	Off-base	26/11/2018	0445_SW393_0.2_181127	Normal	ES1835585	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW393	Off-base	16/11/2021	0445_SW393_211116	Normal	EM2122999	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW393	Off-base	6/05/2022	0445_SW393_220506	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW395	Off-base	9/10/2017	0445_QC253_171010	Interlab_D	567888	0.094[#1]	0.004	**0.214**	0.018[#1]	0.02[#1]	0.12[#1]	0.003	<0.001	0.005	0.002	0.006	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SW395	Off-base	9/10/2017	0445_QC153_171009	Field_D	ES1725705	0.0737	0.0022	**0.196**	0.0274	0.0154	0.122	0.0025	<0.0005	<0.002	<0.0005	0.0067	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW395	Off-base	9/10/2017	0445_SW395_0.5_171010	Normal	ES1725705	0.0925	0.0022	**0.224**	0.0296	0.0164	0.132	0.0034	<0.0005	<0.002	<0.0005	0.0088	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW395	Off-base	3/11/2019	0445_SW395_0.5_191103	Normal	ES1936497	0.0688	0.0036	**0.126**	0.0092	0.0072	0.057	0.0038	<0.002[#2]	<0.002	<0.002[#2]	0.0052	0.0022	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW395	Off-base	16/11/2021	0445_SW395_211116	Normal	EM2122999	0.09	<0.01	**0.19**	0.03	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW395	Off-base	9/05/2022	0445_SW395_220509	Normal	EM2208629	0.04	<0.01	**0.1**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW396	Off-base	10/10/2017	0445_SW396_0.5_171010	Normal	ES1725715	0.434	0.025	**1.91**	0.214	0.16	1.48	0.0256	<0.0005	<0.002	<0.0005	0.189	0.0182	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW396	Off-base	2/08/2018	0445_SW396_0.5_180802	Normal	ES1823005	0.596	0.0914	***2.24***	0.394	0.316	1.64	0.0643	<0.0005	<0.002	0.113	0.281	0.0901	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW396	Off-base	3/11/2019	0445_SW396_0.5_191103	Normal	ES1936497	0.549	0.0356	**1.66**	0.153	0.157	1.11	0.0488	<0.002[#2]	<0.002	<0.002[#2]	0.129	0.0182	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW396	Off-base	16/11/2021	0445_SW396_211116	Normal	EM2122968	0.44	0.04	**1.51**	0.16	0.11	1.07	0.03	<0.02	<0.1	0.04	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW396	Off-base	3/05/2022	0445_SW396_220503	Normal	EM2208382	0.57	0.05	***2.22***	0.21	0.19	1.65	0.05	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW397	Off-base	10/10/2017	0445_SW397_0.5_171010	Normal	ES1725715	5.74	0.434	***12.8***	1.21	1.06	7.02	0.39	<0.0005	0.025	0.225	1.88	0.224	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW397	Off-base	10/10/2017	0445_SW397_1.0_171010	Normal	ES1725715	5.38	0.433	***12.3***	1.17	1.06	6.96	0.382	<0.0005	0.018	0.231	1.76	0.239	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW397	Off-base	10/10/2017	0445_SW397_1.3_171010	Normal	ES1725715	5.61	0.462	***12.7***	1.17	1.09	7.12	0.371	<0.0005	0.024	0.217	1.85	0.211	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW397	Off-base	2/08/2018	0445_SW397_0.5_180802	Normal	ES1823005	2.86	0.361	***7.52***	0.608	0.821	4.66	0.307	<0.0005	0.054	0.191	0.932	0.157	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW397	Off-base	26/11/2018	0445_QC225_181126	Interlab_D	630629	5.8[#1]	0.47[#1]	***11***	0.87	1.3[#1]	5.6[#1]	0.37[#1]	<0.001	0.21	0.33[#1]	1.3[#1]	0.3[#1]	0.002[#1]	<0.001	<0.001	<0.001	<0.001	<0.001
SW397	Off-base	26/11/2018	0445_QC125_181126	Field_D	ES1835587	3.22	0.336	***7.36***	0.696	0.544	4.14	0.263	<0.0005	0.051	0.222	1.05	0.191	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW397	Off-base	26/11/2018	0445_SW397_0.5_181126	Normal	ES1835587	3.84	0.362	***8.9***	0.773	0.711	5.06	0.282	<0.0005	0.051	0.236	1.14	0.206	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW397	Off-base	3/11/2019	0445_QC135_191103	Field_D	ES1936497	4.43	0.383	***9.5***	0.801	1.05	5.07	0.394	<0.002[#2]	0.077	0.289	1.19	0.215	0.0028	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW397	Off-base	3/11/2019	0445_SW397_0.5_191103	Normal	ES1936497	4.27	0.348	***9.44***	0.738	0.98	5.17	0.364	<0.002[#2]	0.079	0.259	1.08	0.191	0.0028	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW397	Off-base	16/11/2021	0445_SW397_211116	Normal	EM2122968	3.32	0.3	***6.64***	0.57	0.51	3.32	0.26	<0.02	0.2	0.23	0.72	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW397	Off-base	3/05/2022	0445_SW397_220503	Normal	EM2208382	3.99	0.34	***8.31***	0.64	0.68	4.32	0.3	<0.02	0.1	0.27	0.87	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

						Perfluorocarbons																		
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																	
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**																			
SW398	Off-base	12/10/2017	0445_SW398_0.5_171012	Normal	ES1725997	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW398	Off-base	1/08/2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW398	Off-base	26/11/2018	0445_SW398_0.5_181126	Normal	ES1835585	0.0004	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW398	Off-base	16/11/2021	0445_SW398_211116	Normal	EM2122999	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW398	Off-base	3/05/2022	0445_SW398_220503	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW400	Off-base	10/10/2017	0445_SW400_0.3_171010	Normal	ES1725715	0.178	0.0225	**0.826**	0.164	0.103	0.648	0.0164	<0.0005	<0.002	0.0082	0.119	0.015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW400	Off-base	2/08/2018	0445_QC206_180802	Interlab_D	611294	0.15[#1]	0.012[#1]	**0.35**	0.027	0.034[#1]	0.2[#1]	0.012[#1]	<0.001	0.007	0.004	0.028[#1]	0.006[#1]	<0.001	0.001	0.002	<0.001	<0.001	<0.001	<0.001
SW400	Off-base	2/08/2018	0445_QC106_180802	Field_D	ES1823005	0.0992	0.0103	**0.228**	0.034	0.031	0.129	0.0084	<0.0005	<0.002	<0.0005	0.0179	0.0063	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW400	Off-base	2/08/2018	0445_SW400_0.2_180802	Normal	ES1823005	0.113	0.0118	**0.283**	0.0237	0.0283	0.17	0.0097	<0.0005	<0.002	0.0063	0.024	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW400	Off-base	3/11/2019	0445_SW400_0.2_191103	Normal	ES1936497	0.11	0.0084	**0.246**	0.0232	0.0218	0.136	0.0066	<0.002[#2]	<0.002	<0.002[#2]	0.0172	0.0032	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW400	Off-base	16/11/2021	0445_SW400_211116	Normal	EM2122968	0.7	0.06	**1.51**	0.26	0.13	0.81	0.06	<0.02	<0.1	0.05	0.14	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW400	Off-base	3/05/2022	0445_SW400_220503	Normal	EM2208382	0.22	0.02	**0.55**	0.07	0.05	0.33	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW401	Off-base	10/10/2017	0445_SW401_0.4_171010	Normal	ES1725715	0.179	0.0229	**0.687**	0.143	0.0922	0.508	0.0138	<0.0005	<0.002	0.0087	0.118	0.0113	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW401	Off-base	3/11/2019	0445_SW401_0.2_191103	Normal	ES1936497	0.0928	0.0074	**0.217**	0.0238	0.0202	0.124	0.006	<0.002[#2]	<0.002	<0.002[#2]	0.0142	0.0024	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW401	Off-base	16/11/2021	0445_SW401_211116	Normal	EM2122968	0.32	0.04	**0.85**	0.15	0.08	0.53	0.03	<0.02	<0.1	0.03	0.11	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW401	Off-base	3/05/2022	0445_SW401_220503	Normal	EM2208382	0.18	0.02	**0.51**	0.07	0.06	0.33	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW403	Off-base	12/10/2017	0445_SW403_0.5_171012	Normal	ES1725997	0.0532	0.0063	**0.224**	0.0389	0.0325	0.171	0.0019	<0.0005	<0.002	<0.0005	0.0279	0.0041	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW403	Off-base	12/11/2021	0445_SW403_211112	Normal	EM2122519	0.26	0.02	**0.59**	0.09	0.07	0.33	<0.02	<0.02	<0.1	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW403	Off-base	5/05/2022	0445_SW403_220505	Normal	EM2208383	0.2	0.02	**0.58**	0.11	0.08	0.38	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW404	Off-base	11/10/2017	0445_SW404_0.5_171011	Normal	ES1725716	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW404	Off-base	1/08/2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW404	Off-base	26/11/2018	0445_SW404_0.52_181126	Normal	ES1835585	0.0025	<0.0005	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW404	Off-base	12/11/2021	0445_SW404_211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW404	Off-base	17/11/2021	0445_SW404_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW404	Off-base	5/05/2022	0445_SW404_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW405	Off-base	12/10/2017	0445_SW405_0.2_171012	Normal	ES1725997	0.0481	0.0046	**0.23**	0.0386	0.0339	0.182	0.0016	<0.0005	<0.002	<0.0005	0.0214	0.0027	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW405	Off-base	2/08/2018	0445_SW405_0.1_180802	Normal	ES1823003	0.0401	0.0021	**0.0997**	0.0069	0.0053	0.0596	0.0022	<0.0005	<0.002	<0.0005	0.0013	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW405	Off-base	12/11/2021	0445_SW405_211112	Normal	EM2122519	0.16	0.02	**0.51**	0.08	0.07	0.35	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW405	Off-base	5/05/2022	0445_SW405_220505	Normal	EM2208383	0.08	<0.01	**0.13**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW409	Off-base	14/02/2018	0445_SW409_0.0_180214	Normal	ES1805190	0.0947	0.0062	**0.115**	0.0026	0.002	0.0204	0.0016	<0.0005	<0.002	0.0034	0.0048	0.0017	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW409	Off-base	12/11/2021	0445_SW409_211112	Normal	EM2122519	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW409	Off-base	6/05/2022	0445_SW409_220506	Normal	EM2208383	0.04	<0.01	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW412	Off-base	12/10/2017	0445_SW412_0.5_171012	Normal	ES1725997	0.0482	0.0037	**0.213**	0.0245	0.0201	0.165	0.001	<0.0005	<0.002	<0.0005	0.0065	0.0025	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW412	Off-base	2/08/2018	0445_SW412_0.1_180802	Normal	ES1823003	0.0384	0.0051	0.0674	0.005	0.0022	0.029	0.0011	<0.0005	<0.002	<0.0005	0.0064	0.0031	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW412	Off-base	26/11/2018	0445_QC126_181126	Field_D	ES1835585	0.0406	0.0037	0.0588	0.0028	0.002	0.0182	<0.0005	<0.0005	<0.002	0.002	0.0064	0.0016	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW412	Off-base	26/11/2018	0445_SW412_0.2_181126	Normal	ES1835585	0.0383	0.0036	0.0569	0.0026	0.0019	0.0186	<0.0005	<0.0005	<0.002	0.0019	0.0068	0.0014	0.0008	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW412	Off-base	12/11/2021	0445_SW412_211112	Normal	EM2122519	0.04	<0.01	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW412	Off-base	6/05/2022	0445_SW412_220506	Normal	EM2208383	0.04	<0.01	**0.11**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW416	Off-base	11/10/2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW416	Off-base	1/08/2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW416	Off-base	26/11/2018	0445_SW416_0.5_181126	Normal	ES1835585	0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW416	Off-base	12/11/2021	0445_SW416_211111	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW416	Off-base	5/05/2022	0445_SW416_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW424	Off-base	10/10/2017	0445_QC213	Interlab_D	567942	3.3[#1]	0.13	***5.1***	0.16	0.22[#1]	1.8[#1]	0.1[#1]	<0.01	0.1	0.11[#1]	0.36[#1]	0.08[#1]	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW424	Off-base	11/10/2017	0445_QC113	Field_D	ES1725716	2.52	0.0623	***4.85***	0.131	0.126	2.33	0.0687	<0.0005	0.011	0.0752	0.435	0.0445	0.0115	0.0016	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
SW424	Off-base	11/10/2017	0445_SW424_0.1_171011	Normal	ES1725716	2.12	0.0607	***4.14***	0.136	0.133	2.02	0.0714	<0.0005	0.01	0.0731	0.371	0.0429	0.0109	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW424	Off-base	13/10/2017	0445_SW424_0.1_171013	Normal	ES1725997	0.706	0.0247	**1.33**	0.059	0.0626	0.622	0.0142	<0.0005	<0.002	0.0475	0.103	0.0219	0.006	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW424	Off-base	15/11/2021	0445_QC208_211115	Interlab_D	842787	1.1	0.04	**1.83**	0.03	0.05	0.73	0.03	<0.01	0.06	0.04	0.1	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW424	Off-base	16/11/2021	0445_SW424_211115	Normal	EM2122999	0.76	0.03	**1.16**	0.04	0.02	0.4	0.02	<0.02	<0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW424	Off-base	7/05/2022	0445_SW424_220504	Normal	EM2208383	0.8	0.02	**1.28**	0.03	0.04	0.48	0.03	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW427	Off-base	16/10/2017	0445_SW427_0.0_171016	Normal	ES1726004	0.111	0.003	**0.133**	0.0045	0.0026	0.0222	0.0018	<0.0005	<0.002	0.0021	0.0046	0.0016	0.0009	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW427	Off-base	15/11/2021	0445_SW427_211115	Normal	EM2122999	0.19	<0.01	**0.25**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW427	Off-base	6/05/2022	0445_SW427_220506	Normal	EM2208383	0.03	<0.01	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW430	Off-base	16/10/2017	0445_SW430_0.1_171016	Normal	ES1726004	0.0465	0.0036	0.0618	0.001	0.0025	0.0153	0.0008	<0.0005	<0.002	<0.0005	0.0042	0.0015	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW430	Off-base	2/08/2018	0445_SW430_0.1_180802	Normal	ES1823003	0.0199	0.0039	0.0364	<0.0005	0.0011	0.0165	0.0005	<0.0005	<0.002	<0.0005	0.0042	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW430	Off-base	16/11/2021	0445_SW430_211115	Normal	EM2122999	0.1	<0.01	**0.16**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW430	Off-base	6/05/2022	0445_SW430_220506	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW431	Off-base	16/10/2017	0445_SW431_0.1_171016	Normal	ES1726004	0.0525	0.0032	**0.0732**	<0.0005	0.0026	0.0207	0.001	<0.0005	<0.002	<0.0005	0.0044	0.0013	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW431	Off-base	16/11/2021	0445_SW431_211116	Normal	EM2122999	0.07	<0.01	**0.1**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW431	Off-base	6/05/2022	0445_SW431_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

						Perfluorocarbons																		
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																	
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**																			
SW432	Off-base	16/10/2017	0445_SW432_0.1_171016	Normal	ES1726004	0.0545	0.0044	**0.0769**	<0.0005	0.0023	0.0224	0.001	<0.0005	<0.002	<0.0005	0.0055	0.0019	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005
SW432	Off-base	16/11/2021	0445_SW432_211116	Normal	EM2122999	0.05	<0.01	**0.08**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW432	Off-base	6/05/2022	0445_SW432_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW434	Off-base	9/10/2017	0445_SW434_0.5_171011	Normal	ES1725705	0.0038	<0.0005	0.0045	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW434	Off-base	15/11/2021	0445_SW434_211115	Normal	EM2122999	0.05	<0.01	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW434	Off-base	6/05/2022	0445_SW434_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW448	On-base	20/10/2017	0445S_SW448_0.1_171020	Normal	ES1726682	1.41	0.0428	***2.38***	0.108	0.0448	0.965	0.104	<0.0005	0.015	0.179	0.111	0.0549	0.0207	0.0026	0.0042	0.0005	0.0021	<0.0005
SW448	On-base	16/11/2021	0445_SW448_211115	Normal	EM2122998	2.09	0.07	***3.23***	0.06	0.05	1.14	0.04	<0.02	<0.1	0.12	0.25	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW462	Off-base	23/11/2017	0445_SW462_0.1_171123	Normal	ES1729741	0.0617	0.0059	**0.117**	0.0122	0.0159	0.0552	0.0044	<0.0005	<0.002	<0.0005	0.0123	0.0031	0.0011	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
SW462	Off-base	1/08/2018	0445_SW462_0.2_180801	Normal	ES1823003	0.0265	0.0035	0.0481	<0.0005	0.0017	0.0216	0.0008	<0.0005	<0.002	<0.0005	0.0045	0.0016	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW462	Off-base	11/11/2021	0445_SW462_211111	Normal	EM2122518	0.08	<0.01	**0.19**	0.03	0.02	0.11	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW462	Off-base	5/05/2022	0445_QC205_220505	Interlab_D	886780	0.04[#1]	<0.01	0.06	<0.01	<0.01	0.02[#1]	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW462	Off-base	5/05/2022	0445_SW462_220505	Normal	EM2208383	0.03	<0.01	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW462	Off-base	7/05/2022	0445_QC105_220505	Field_D	EM2208383	0.02	<0.01	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW463	Off-base	11/12/2017	0445_SW463_0.1_171211	Normal	ES1731468	0.54	0.119	**1.03**	0.0266	0.0392	0.49	0.0108	<0.0005	<0.002	0.0448	0.206	0.0173	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.006
SW463	Off-base	16/11/2021	0445_SW463_211115	Normal	EM2122999	1.36	0.04	***2.1***	0.05	0.03	0.74	0.04	<0.02	<0.1	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW463	Off-base	4/05/2022	0445_SW463_220504	Normal	EM2208383	0.99	0.02	**1.41**	0.04	0.02	0.42	0.02	<0.02	<0.1	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW470	Off-base	2/08/2018	0445_SW470_0.5_180802	Normal	ES1823003	0.16	0.0048	**0.33**	0.0223	0.0153	0.17	0.0057	<0.0005	<0.002	<0.0005	0.0066	0.0028	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW470	Off-base	3/11/2019	0445_SW470_0.5_191103	Normal	ES1936497	0.179	0.0052	**0.388**	0.0258	0.0264	0.209	0.0074	<0.002[#2]	<0.002	<0.002[#2]	0.0072	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW470	Off-base	16/11/2021	0445_SW470_211116	Normal	EM2122999	0.06	<0.01	**0.13**	0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW470	Off-base	3/05/2022	0445_SW470_220503	Normal	EM2208383	0.19	<0.01	**0.42**	0.03	0.03	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW470	Off-base	4/05/2022	0445_QC203_220504	Interlab_D	886780	0.54[#1]	0.03[#1]	**0.67**	0.03	0.02[#1]	0.13[#1]	<0.01	<0.01	<0.05	0.04	0.04	0.02[#1]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SW470	Off-base	7/05/2022	0445_QC103_220504	Field_D	EM2208381	0.46	0.02	**0.61**	0.02	<0.02	0.15	<0.02	<0.02	<0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW471	Off-base	2/08/2018	0445_SW471_0.2_180802	Normal	ES1823005	0.257	0.0312	**1.14**	0.306	0.192	0.881	0.0351	<0.0005	<0.002	0.0536	0.138	0.0319	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW471	Off-base	3/11/2019	0445_SW471_0.5_191103	Normal	ES1936497	0.69	0.0844	***2.55***	0.414	0.391	1.86	0.081	<0.002[#2]	<0.002	0.08	0.316	0.0508	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.005[#2]
SW471	Off-base	16/11/2021	0445_SW471_211116	Normal	EM2122968	0.81	0.06	**1.82**	0.23	0.15	1.01	0.07	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW471	Off-base	3/05/2022	0445_SW471_220503	Normal	EM2208382	1.14	0.15	***3.44***	0.45	0.4	2.3	0.12	<0.02	<0.1	0.14	0.46	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW487	Off-base	2/08/2018	0445_SW487_0.01_180802	Normal	ES1823005	6.26	0.383	***9.09***	0.541	0.536	2.83	0.35	<0.0005	0.041	0.191	0.671	0.179	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SW487	Off-base	16/11/2021	0445_SW487_211116	Normal	EM2122968	3.45	0.3	***6.82***	0.6	0.57	3.37	0.27	<0.02	0.2	0.21	0.69	0.18	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW487	Off-base	3/05/2022	0445_SW487_220503	Normal	EM2208382	4.13	0.32	***7.71***	0.64	0.61	3.58	0.29	<0.02	0.1	0.25	0.86	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

Data Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

#2 Reported Analyte LOR is higher than Requested Analyte LOR

						Perfluorocarbons													
						Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**														
SW307	On-base	17/11/2021	0445_SW307_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-
SW310	On-base	17/11/2021	0445_SW310_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.32	-
SW311	On-base	17/11/2021	0445_SW311_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.37	-
SW313	On-base	17/11/2021	0445_QC111_211117	Field_D	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.87	-
SW313	On-base	17/11/2021	0445_QC211_211117	Interlab_D	842787	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	8.14	0.00645
SW313	On-base	17/11/2021	0445_SW313_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.1	-
SW316	On-base	17/10/2017	0445S_SW316_0.1_171017	Normal	ES1726190	≤0.002[#2]	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	1.26	-
SW316	On-base	17/11/2021	0445_SW316_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.24	-
SW316	On-base	16/05/2022	0445S_SW316_220516	Normal	EM2209833	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	-
SW321	On-base	17/11/2021	0445_QC112_211117	Field_D	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.21	-
SW321	On-base	17/11/2021	0445_QC212_211117	Interlab_D	842787	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	11.64	0.01041
SW321	On-base	17/11/2021	0445_SW321_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.75	-
SW321	On-base	4/05/2022	0445_SW321_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.47	-
SW322	On-base	17/11/2021	0445_SW322_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.34	-
SW322	On-base	4/05/2022	0445_SW322_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.42	-
SW323	On-base	17/10/2017	0445S_SW323_0.2_171017	Normal	ES1726190	≤0.002[#2]	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	0.005	≤0.002[#2]	≤0.002[#2]	1.65	-
SW323	On-base	17/11/2021	0445_SW323_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	-
SW323	On-base	4/05/2022	0445_SW323_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.97	-
SW324	On-base	20/10/2017	0445S_SW324_0.1_171020	Normal	ES1726682	0.0039	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.015	0.003	<0.001	2.86	-
SW324	On-base	17/11/2021	0445_QC110_211117	Field_D	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.73	-
SW324	On-base	17/11/2021	0445_QC210_211117	Interlab_D	842787	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	4.43	0.00371
SW324	On-base	17/11/2021	0445_SW324_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.2	-
SW324	On-base	4/05/2022	0445_SW324_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.33	-
SW326	On-base	17/11/2021	0445_SW326_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.49	0.11	<0.05	13.2	-
SW326	On-base	4/05/2022	0445_SW326_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.76	-
SW332	On-base	17/10/2017	0445S_SW332_0.05_171017	Normal	ES1726190	0.0164	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	5.47	-
SW332	On-base	17/11/2021	0445_SW332_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-
SW333	On-base	17/10/2017	0445S_SW333_0.05_171017	Normal	ES1726190	≤0.002[#2]	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	0.68	-
SW333	On-base	17/11/2021	0445_SW333_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.19	-
SW333	On-base	4/05/2022	0445_SW333_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-
SW336	On-base	18/10/2017	0445S_QC267_171018	Interlab_D	569078	0.042	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	0.005	0.92	1.9	0.018	60.943	-
SW336	On-base	18/10/2017	0445S_QC167_171018	Field_D	ES1726433	0.0132	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	0.006	0.93	1.3	0.02	26.8	-
SW336	On-base	18/10/2017	0445S_SW336_0.1_171018	Normal	ES1726433	0.0126	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	0.006	1.03	1.27	0.016	27.4	-
SW336	On-base	15/11/2021	0445_SW336_211115	Normal	EM2122998	0.03	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	0.35	0.83	0.14	10.5	-
SW336	On-base	4/05/2022	0445_SW336_220504	Normal	EM2208381	0.11	≤0.09[#2]	≤0.00009[#2]	≤0.09[#2]	≤0.09[#2]	≤0.04[#2]	≤0.04[#2]	<0.05	0.9	1.44	1.19	15.9	-
SW338	On-base	18/10/2017	0445S_SW338_0.2_171018	Normal	ES1726433	0.0046	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	7.18	-
SW338	On-base	10/11/2021	0445_SW338_211109	Normal	EM2122518	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.7	-
SW338	On-base	4/05/2022	0445_SW338_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.25	-
SW340	On-base	18/10/2017	0445S_SW340_0.03_171018	Normal	ES1726433	0.011	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	0.18	0.41	0.045	9.38	-
SW340	On-base	10/11/2021	0445_SW340_211109	Normal	EM2122518	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.61	-
SW346	On-base	12/10/2017	0445S_SW346_0.2_171013	Normal	ES1725991	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.052	0.037	0.001	2.64	-
SW346	On-base	17/11/2021	0445_SW346_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.23	-
SW346	On-base	4/05/2022	0445_SW346_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.05	-
SW349	On-base	12/10/2017	0445S_QC159_171012	Field_D	ES1725991	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.011	0.002	<0.001	1.99	-
SW349	On-base	13/10/2017	0445S_SW349_0.5_171013	Normal	ES1725991	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.01	0.001	<0.001	2.1	-
SW349	On-base	15/11/2021	0445_QC206_211115	Interlab_D	842787	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.51	0.00111
SW349	On-base	16/11/2021	0445_QC106_211115	Field_D	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1	-
SW349	On-base	16/11/2021	0445_SW349_211115	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	-
SW349	On-base	4/05/2022	0445_SW349_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.74	-
SW355	On-base	13/10/2017	0445S_SW355_0.5_171013	Normal	ES1725991	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.813	-
SW355	On-base	16/11/2021	0445_QC107_211117	Field_D	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-
SW355	On-base	17/11/2021	0445_QC207_211117	Interlab_D	842787	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.52	0.00041
SW355	On-base	17/11/2021	0445_SW355_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-
SW355	On-base	4/05/2022	0445_QC204_220504	Interlab_D	886780	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.37	0.00032
SW355	On-base	4/05/2022	0445_SW355_220504	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-
SW355	On-base	7/05/2022	0445_QC104_220504	Field_D	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.25	-
SW370	On-base	23/10/2017	0445N_SW370_0.01_171023	Normal	ES1726698	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.003	<0.001	<0.001	0.55	-
SW370	On-base	17/11/2021	0445_SW370_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-
SW370	On-base	6/05/2022	0445_SW370_220506	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-

						Perfluorocarbons													
						Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**														
SW374	On-base	23/10/2017	0445N_SW374_0.1_171023	Normal	ES1726698	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.525	-
SW374	On-base	17/11/2021	0445_SW374_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-
SW374	On-base	6/05/2022	0445_SW374_220506	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
SW375	On-base	23/10/2017	0445N_QC228_171023	Interlab_D	569535	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.451	-
SW375	On-base	23/10/2017	0445N_QC128_171023	Field_D	ES1726698	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.465	-
SW375	On-base	23/10/2017	0445N_SW375_0.1_171023	Normal	ES1726698	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.44	-
SW375	On-base	1/08/2018	0445_QC205_180801	Interlab_D	611290	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.145	0.000107
SW375	On-base	1/08/2018	0445_QC105_180801	Field_D	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.139	-
SW375	On-base	1/08/2018	0445_SW375_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.144	-
SW375	On-base	17/11/2021	0445_SW375_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
SW375	On-base	6/05/2022	0445_SW375_220506	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-
SW379	On-base	16/11/2021	0445_SW379_21116	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.07	-
SW380	On-base	10/11/2021	0445_SW380_211108	Normal	EM2122518	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.59	-
SW382	On-base	24/10/2017	0445E_QC131_171024	Field_D	ES1726816	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.164	-
SW382	On-base	24/10/2017	0445E_SW382_0.1_171024	Normal	ES1726816	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.175	-
SW382	On-base	16/11/2021	0445_QC109_211116	Field_D	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW382	On-base	16/11/2021	0445_QC209_211116	Interlab_D	842787	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.00001
SW382	On-base	17/11/2021	0445_SW382_211116	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW382	On-base	3/05/2022	0445_SW382_220503	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW387	On-base	25/10/2017	0445E_SW387_0.2_171025	Normal	ES1726955	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.222	-
SW387	On-base	16/11/2021	0445_SW387_211116	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
SW387	On-base	3/05/2022	0445_QC101_220503	Field_D	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-
SW387	On-base	3/05/2022	0445_QC201_220503	Interlab_D	886780	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.11	0.0001
SW387	On-base	3/05/2022	0445_SW387_220503	Normal	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
SW388	On-base	25/10/2017	0445E_SW388_0.2_171025	Normal	ES1726955	≤0.002[#2]	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	0.416	-
SW388	On-base	16/11/2021	0445_SW388_211116	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.54	-
SW388	On-base	16/05/2022	0445S_SW388_220516	Normal	EM2209833	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.07	-
SW390	Off-base	13/10/2017	0445_SW390_0.5_171013	Normal	ES1725997	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0006	-
SW390	Off-base	31/07/2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW390	Off-base	26/11/2018	0445_SW390_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.001	-
SW390	Off-base	9/11/2021	0445_SW390_211109	Normal	EM2122518	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW390	Off-base	5/05/2022	0445_SW390_220505	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW393	Off-base	16/10/2017	0445_SW393_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0029	-
SW393	Off-base	1/08/2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW393	Off-base	26/11/2018	0445_SW393_0.2_181127	Normal	ES1835585	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0009	-
SW393	Off-base	16/11/2021	0445_SW393_211116	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW393	Off-base	6/05/2022	0445_SW393_220506	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW395	Off-base	9/10/2017	0445_QC253_171010	Interlab_D	567888	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.274	-
SW395	Off-base	9/10/2017	0445_QC153_171009	Field_D	ES1725705	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.251	-
SW395	Off-base	9/10/2017	0445_SW395_0.5_171010	Normal	ES1725705	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.286	-
SW395	Off-base	3/11/2019	0445_SW395_0.5_191103	Normal	ES1936497	≤0.002[#2]	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	0.157	-
SW395	Off-base	16/11/2021	0445_SW395_211116	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-
SW395	Off-base	9/05/2022	0445_SW395_220509	Normal	EM2208629	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
SW396	Off-base	10/10/2017	0445_SW396_0.5_171010	Normal	ES1725715	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	2.54	-
SW396	Off-base	2/08/2018	0445_SW396_0.5_180802	Normal	ES1823005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	3.58	-
SW396	Off-base	3/11/2019	0445_SW396_0.5_191103	Normal	ES1936497	≤0.002[#2]	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	2.2	-
SW396	Off-base	16/11/2021	0445_SW396_211116	Normal	EM2122968	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.02	-
SW396	Off-base	3/05/2022	0445_SW396_220503	Normal	EM2208382	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.99	-
SW397	Off-base	10/10/2017	0445_SW397_0.5_171010	Normal	ES1725715	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	18.2	-
SW397	Off-base	10/10/2017	0445_SW397_1.0_171010	Normal	ES1725715	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	17.7	-
SW397	Off-base	10/10/2017	0445_SW397_1.3_171010	Normal	ES1725715	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.023	<0.001	<0.001	18.2	-
SW397	Off-base	2/08/2018	0445_SW397_0.5_180802	Normal	ES1823005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.001	0.022	<0.001	<0.001	11	-
SW397	Off-base	26/11/2018	0445_QC225_181126	Interlab_D	630629	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005	0.002	0.013	<0.001	<0.001	17	0.012
SW397	Off-base	26/11/2018	0445_QC125_181126	Field_D	ES1835587	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.023	<0.001	<0.001	10.7	-
SW397	Off-base	26/11/2018	0445_SW397_0.5_181126	Normal	ES1835587	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	12.7	-
SW397	Off-base	3/11/2019	0445_QC135_191103	Field_D	ES1936497	≤0.002[#2]	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	0.021	≤0.002[#2]	≤0.002[#2]	13.9	-
SW397	Off-base	3/11/2019	0445_SW397_0.5_191103	Normal	ES1936497	≤0.002[#2]	≤0.005[#2]	≤0.000005[#2]	≤0.005[#2]	≤0.005[#2]	≤0.002[#2]	≤0.002[#2]	≤0.002[#2]	0.019	≤0.002[#2]	≤0.002[#2]	13.5	-
SW397	Off-base	16/11/2021	0445_SW397_211116	Normal	EM2122968	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.62	-
SW397	Off-base	3/05/2022	0445_SW397_220503	Normal	EM2208382	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.7	-

						Perfluorocarbons													
						Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**														
SW398	Off-base	12/10/2017	0445_SW398_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0009	-
SW398	Off-base	1/08/2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW398	Off-base	26/11/2018	0445_SW398_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0004	-
SW398	Off-base	16/11/2021	0445_SW398_211116	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW398	Off-base	3/05/2022	0445_SW398_220503	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW400	Off-base	10/10/2017	0445_SW400_0.3_171010	Normal	ES1725715	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.27	-
SW400	Off-base	2/08/2018	0445_QC206_180802	Interlab_D	611294	<0.005	<0.005	<0.000005	<0.005	<0.005	0.006	0.005	<0.001	<0.005	<0.001	<0.001	0.494	0.000362
SW400	Off-base	2/08/2018	0445_QC106_180802	Field_D	ES1823005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.337	-
SW400	Off-base	2/08/2018	0445_SW400_0.2_180802	Normal	ES1823005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.391	-
SW400	Off-base	3/11/2019	0445_SW400_0.2_191103	Normal	ES1936497	<0.002[#2]	<0.005[#2]	<0.000005[#2]	<0.005[#2]	<0.005[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	0.326	-
SW400	Off-base	16/11/2021	0445_SW400_211116	Normal	EM2122968	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.25	-
SW400	Off-base	3/05/2022	0445_SW400_220503	Normal	EM2208382	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.75	-
SW401	Off-base	10/10/2017	0445_SW401_0.4_171010	Normal	ES1725715	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.1	-
SW401	Off-base	3/11/2019	0445_SW401_0.2_191103	Normal	ES1936497	<0.002[#2]	<0.005[#2]	<0.000005[#2]	<0.005[#2]	<0.005[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	0.291	-
SW401	Off-base	16/11/2021	0445_SW401_211116	Normal	EM2122968	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.31	-
SW401	Off-base	3/05/2022	0445_SW401_220503	Normal	EM2208382	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.72	-
SW403	Off-base	12/10/2017	0445_SW403_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.336	-
SW403	Off-base	12/11/2021	0445_SW403_211112	Normal	EM2122519	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.84	-
SW403	Off-base	5/05/2022	0445_SW403_220505	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.84	-
SW404	Off-base	11/10/2017	0445_SW404_0.5_171011	Normal	ES1725716	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0012	-
SW404	Off-base	1/08/2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW404	Off-base	26/11/2018	0445_SW404_0.52_181126	Normal	ES1835585	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0025	-
SW404	Off-base	12/11/2021	0445_SW404_211112	Normal	EM2122519	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW404	Off-base	17/11/2021	0445_SW404_211117	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW404	Off-base	5/05/2022	0445_SW404_220505	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW405	Off-base	12/10/2017	0445_SW405_0.2_171012	Normal	ES1725997	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.333	-
SW405	Off-base	2/08/2018	0445_SW405_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.118	-
SW405	Off-base	12/11/2021	0445_SW405_211112	Normal	EM2122519	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.74	-
SW405	Off-base	5/05/2022	0445_SW405_220505	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-
SW409	Off-base	14/02/2018	0445_SW409_0.0_180214	Normal	ES1805190	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.139	-
SW409	Off-base	12/11/2021	0445_SW409_211112	Normal	EM2122519	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
SW409	Off-base	6/05/2022	0445_SW409_220506	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-
SW412	Off-base	12/10/2017	0445_SW412_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.272	-
SW412	Off-base	2/08/2018	0445_SW412_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0913	-
SW412	Off-base	26/11/2018	0445_QC126_181126	Field_D	ES1835585	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0789	-
SW412	Off-base	26/11/2018	0445_SW412_0.2_181126	Normal	ES1835585	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0766	-
SW412	Off-base	12/11/2021	0445_SW412_211112	Normal	EM2122519	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-
SW412	Off-base	6/05/2022	0445_SW412_220506	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	-
SW416	Off-base	11/10/2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW416	Off-base	1/08/2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-
SW416	Off-base	26/11/2018	0445_SW416_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0005	-
SW416	Off-base	12/11/2021	0445_SW416_211111	Normal	EM2122519	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW416	Off-base	5/05/2022	0445_SW416_220505	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW424	Off-base	10/10/2017	0445_QC213	Interlab_D	567942	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	6.38	-
SW424	Off-base	11/10/2017	0445_QC113	Field_D	ES1725716	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	5.82	-
SW424	Off-base	11/10/2017	0445_SW424_0.1_171011	Normal	ES1725716	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	5.05	-
SW424	Off-base	13/10/2017	0445_SW424_0.1_171013	Normal	ES1725997	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.01	0.003	<0.001	1.68	-
SW424	Off-base	15/11/2021	0445_QC208_211115	Interlab_D	842787	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.22	0.00187
SW424	Off-base	16/11/2021	0445_SW424_211115	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.36	-
SW424	Off-base	7/05/2022	0445_SW424_220504	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.45	-
SW427	Off-base	16/10/2017	0445_SW427_0.0_171016	Normal	ES1726004	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	0.156	-
SW427	Off-base	15/11/2021	0445_SW427_211115	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.25	-
SW427	Off-base	6/05/2022	0445_SW427_220506	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-
SW430	Off-base	16/10/2017	0445_SW430_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0766	-
SW430	Off-base	2/08/2018	0445_SW430_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0471	-
SW430	Off-base	16/11/2021	0445_SW430_211115	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	-
SW430	Off-base	6/05/2022	0445_SW430_220506	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW431	Off-base	16/10/2017	0445_SW431_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0867	-
SW431	Off-base	16/11/2021	0445_SW431_211116	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
SW431	Off-base	6/05/2022	0445_SW431_220506	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-

						Perfluorocarbons													
						Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
					LOR	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	**Property**	**Sampled Date**	**Field ID**	**Sample Type**	**Lab Report Number**														
SW432	Off-base	16/10/2017	0445_SW432_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0936	-
SW432	Off-base	16/11/2021	0445_SW432_211116	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-
SW432	Off-base	6/05/2022	0445_SW432_220506	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
SW434	Off-base	9/10/2017	0445_SW434_0.5_171011	Normal	ES1725705	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0045	-
SW434	Off-base	15/11/2021	0445_SW434_211115	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
SW434	Off-base	6/05/2022	0445_SW434_220506	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
SW448	On-base	20/10/2017	0445S_SW448_0.1_171020	Normal	ES1726682	0.0056	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.012	0.005	<0.001	3.09	-
SW448	On-base	16/11/2021	0445_SW448_211115	Normal	EM2122998	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.85	-
SW462	Off-base	23/11/2017	0445_SW462_0.1_171123	Normal	ES1729741	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.172	-
SW462	Off-base	1/08/2018	0445_SW462_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0608	-
SW462	Off-base	11/11/2021	0445_SW462_211111	Normal	EM2122518	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	-
SW462	Off-base	5/05/2022	0445_QC205_220505	Interlab_D	886780	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.00006
SW462	Off-base	5/05/2022	0445_SW462_220505	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-
SW462	Off-base	7/05/2022	0445_QC105_220505	Field_D	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-
SW463	Off-base	11/12/2017	0445_SW463_0.1_171211	Normal	ES1731468	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.5	-
SW463	Off-base	16/11/2021	0445_SW463_211115	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.35	-
SW463	Off-base	4/05/2022	0445_SW463_220504	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.56	-
SW470	Off-base	2/08/2018	0445_SW470_0.5_180802	Normal	ES1823003	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.388	-
SW470	Off-base	3/11/2019	0445_SW470_0.5_191103	Normal	ES1936497	<0.002#2	<0.005#2	<0.000005#2	<0.005#2	<0.005#2	<0.002#2	<0.002#2	<0.002#2	<0.002#2	<0.002#2	<0.002#2	0.46	-
SW470	Off-base	16/11/2021	0445_SW470_211116	Normal	EM2122999	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
SW470	Off-base	3/05/2022	0445_SW470_220503	Normal	EM2208383	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.48	-
SW470	Off-base	4/05/2022	0445_QC203_220504	Interlab_D	886780	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.87	0.0007
SW470	Off-base	7/05/2022	0445_QC103_220504	Field_D	EM2208381	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.73	-
SW471	Off-base	2/08/2018	0445_SW471_0.2_180802	Normal	ES1823005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.92	-
SW471	Off-base	3/11/2019	0445_SW471_0.5_191103	Normal	ES1936497	<0.002#2	<0.005#2	<0.000005#2	<0.005#2	<0.005#2	<0.002#2	<0.002#2	<0.002#2	<0.002#2	<0.002#2	<0.002#2	3.97	-
SW471	Off-base	16/11/2021	0445_SW471_211116	Normal	EM2122968	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.6	-
SW471	Off-base	3/05/2022	0445_SW471_220503	Normal	EM2208382	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.28	-
SW487	Off-base	2/08/2018	0445_SW487_0.01_180802	Normal	ES1823005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.022	<0.001	<0.001	12	-
SW487	Off-base	16/11/2021	0445_SW487_211116	Normal	EM2122968	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.84	-
SW487	Off-base	3/05/2022	0445_SW487_220503	Normal	EM2208382	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11	-

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

Data Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/b

#2 Reported Analyte LOR is higher than Requested Analyte LOR

																							Perfluorocarbons		
								Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorononanesulfonic acid (PFNS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)
								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL								0.0002	0.0002	0.0002	0.005	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.005	0.0002	0.0002	0.0002	0.0002	0.0002
Location_Code	**Site_ID**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																				
SD323	Bandiana	17/10/2017	0445S_SD323_0.0_171017	Normal	ES1726190	0.0327	<0.0002	0.0342	-	<0.0002	<0.0002	0.0015	0.0003	0.0008	<0.001	<0.0002	0.0003	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD323	Bandiana	4/05/2022	0445_QC209_220504	Interlab_D	886780	0.016[#1]	<0.005	0.016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SD323	Bandiana	4/05/2022	0445_SD323_220504	Normal	EM2208381	0.0167	<0.0002	0.0173	-	<0.0002	<0.0002	0.0006	<0.0002	0.0004	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	0.0004
SD323	Bandiana	7/05/2022	0445_QC109_220504	Field_D	EM2208381	0.0152	<0.0002	0.0158	-	<0.0002	<0.0002	0.0006	<0.0002	0.0004	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0005
SD346	Bandiana	12/10/2017	0445S_SD346_0.0_171013	Normal	ES1725991	0.0152	<0.0002	0.0161	-	<0.0002	<0.0002	0.0009	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD346	Bandiana	4/05/2022	0445_SD346_220504	Normal	EM2208381	0.0039	<0.0002	0.0041	-	<0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD355	Bandiana	13/10/2017	0445S_SD355_0.0_171012	Normal	ES1725991	0.012	<0.0002	0.0128	-	<0.0002	<0.0002	0.0008	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD355	Bandiana	7/05/2022	0445_SD355_220504	Normal	EM2208381	0.001	<0.0002	0.001	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD375	Bandiana	23/10/2017	0445N_SD375_0.0_171023	Normal	ES1726698	0.0114	<0.0002	0.0118	-	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD375	Bandiana	6/05/2022	0445_SD375_220506	Normal	EM2208381	0.0042	<0.0002	0.0044	-	<0.0002	<0.0002	0.0002	<0.0002	0.0005	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD382	Bandiana	24/10/2017	0445N_SD382_0.0_171024	Normal	ES1726816	0.0011	<0.0002	0.0011	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002
SD382	Bandiana	3/05/2022	0445_SD382_220503	Normal	EM2208381	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD395	Bandiana	9/10/2017	0445_QC152_171009	Field_D	ES1725705	0.0019	<0.0002	0.0022	-	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD395	Bandiana	9/10/2017	0445_SD395_0.0_171010	Normal	ES1725705	0.0016	<0.0002	0.0016	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD395	Bandiana	10/10/2017	0445_QC252_171010	Interlab_D	567888	0.011[#1]	<0.001	0.0121	-	<0.001	<0.001	0.0011	<0.001	<0.001	<0.005	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SD395	Bandiana	3/11/2019	0445_SD395_0.0_191103	Normal	ES1936497	0.0029	<0.0002	0.0033	-	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD395	Bandiana	3/05/2022	0445_SD395_220503	Normal	EM2208382	0.0056	<0.0002	0.0059	-	<0.0002	<0.0002	0.0003	<0.0002	0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD396	Bandiana	10/10/2017	0445_SD396_0.0_171010	Normal	ES1725715	0.0116	<0.0002	0.0162	-	0.0005	0.0003	0.0046	<0.0002	<0.0002	<0.001	<0.0002	0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD396	Bandiana	3/11/2019	0445_SD396_0.0_191103	Normal	ES1936497	0.0421	0.0003	0.0545	-	0.001	0.0007	0.0124	0.0011	<0.0002	<0.001	<0.0002	0.0006	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD396	Bandiana	3/05/2022	0445_SD396_220503	Normal	EM2208382	0.018	<0.0002	0.0373	-	0.0008	0.0014	0.0193	0.0009	<0.0002	<0.001	<0.0002	0.0009	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD397	Bandiana	10/10/2017	0445_SD397_0.0_171010	Normal	ES1725715	0.0263	0.0017	0.0527	-	0.0026	0.0028	0.0264	0.0024	<0.0002	<0.001	0.0006	0.0042	-	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD397	Bandiana	10/10/2017	0445_SD397_0.4_171010	Normal	ES1725715	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD397	Bandiana	10/10/2017	0445_SD397_0.7_171010	Normal	ES1725715	0.0026	0.0003	0.0042	-	0.0004	0.0002	0.0016	<0.0002	<0.0002	<0.001	<0.0002	0.0008	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD397	Bandiana	3/11/2019	0445_QC136_191103	Field_D	ES1936497	0.0324	0.0006	0.0387	-	0.0007	0.0007	0.0063	0.0009	<0.0002	<0.001	0.0002	0.0019	-	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD397	Bandiana	3/11/2019	0445_SD397_0.0_191103	Normal	ES1936497	0.028	0.0005	0.0336	-	0.0006	0.0006	0.0056	0.0008	<0.0002	<0.001	0.0002	0.0016	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD397	Bandiana	3/05/2022	0445_SD397_220503	Normal	EM2208382	0.0196	0.0004	0.0442	-	0.0008	0.0021	0.0246	0.0016	<0.0002	<0.001	<0.0002	0.0008	-	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD400	Bandiana	10/10/2017	0445_SD400_0.0_171010	Normal	ES1725715	0.0016	<0.0002	0.0031	-	0.0002	<0.0002	0.0015	<0.0002	<0.0002	<0.001	<0.0002	0.0003	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD400	Bandiana	3/11/2019	0445_SD400_0.0_191103	Normal	ES1936497	0.0078	<0.0002	0.0092	-	<0.0002	<0.0002	0.0014	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD400	Bandiana	3/05/2022	0445_SD400_220503	Normal	EM2208383	0.0117	<0.0002	0.0144	-	<0.0002	<0.0002	0.0027	0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD412	Bandiana	12/10/2017	0445_SD412_0.0_171012	Normal	ES1725997	0.0028	<0.0002	0.0038	-	<0.0002	<0.0002	0.001	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD412	Bandiana	6/05/2022	0445_SD412_220506	Normal	EM2208383	0.0014	<0.0002	0.0014	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD424	Bandiana	10/10/2017	0445_QC214	Interlab_D	567942	0.016[#1]	<0.005	0.016	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SD424	Bandiana	11/10/2017	0445_QC114	Field_D	ES1725716	0.0012	<0.0002	0.0019	-	<0.0002	<0.0002	0.0007	<0.0002	<0.0002	<0.001	<0.0002	0.0005	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD424	Bandiana	11/10/2017	0445_SD424_0.0_171011	Normal	ES1725716	0.0011	<0.0002	0.0016	-	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.001	<0.0002	0.0003	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD424	Bandiana	13/10/2017	0445_SD424_0.0_171013	Normal	ES1725997	0.0062	0.0006	0.0069	-	<0.0002	<0.0002	0.0007	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD424	Bandiana	4/05/2022	0445_SD424_220504	Normal	EM2208383	0.0038	<0.0002	0.0041	-	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD463	Bandiana	11/12/2017	0445_SD463_0.0_171211	Normal	ES1731468	0.005	<0.0002	0.0056	-	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD463	Bandiana	4/05/2022	0445_QC110_220504	Field_D	EM2208383	0.0086	<0.0002	0.0091	-	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SD463	Bandiana	4/05/2022	0445_QC210_220504	Interlab_D	886780	0.013[#1]	<0.005	0.013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SD463	Bandiana	4/05/2022	0445_SD463_220504	Normal	EM2208383	0.0085	<0.0002	0.0088	-	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

						Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.0005	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.005	0.005
Location_Code	**Site_ID**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**															
SD323	Bandiana	17/10/2017	0445S_SD323_0.0_171017	Normal	ES1726190	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0363	-	-
SD323	Bandiana	4/05/2022	0445_QC209_220504	Interlab_D	886780	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.05	0.016	0.016
SD323	Bandiana	4/05/2022	0445_SD323_220504	Normal	EM2208381	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0184	-	-
SD323	Bandiana	7/05/2022	0445_QC109_220504	Field_D	EM2208381	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0171	-	-
SD346	Bandiana	12/10/2017	0445S_SD346_0.0_171013	Normal	ES1725991	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0161	-	-
SD346	Bandiana	4/05/2022	0445_SD346_220504	Normal	EM2208381	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0043	-	-
SD355	Bandiana	13/10/2017	0445S_SD355_0.0_171012	Normal	ES1725991	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0128	-	-
SD355	Bandiana	7/05/2022	0445_SD355_220504	Normal	EM2208381	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.001	-	-
SD375	Bandiana	23/10/2017	0445N_SD375_0.0_171023	Normal	ES1726698	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0118	-	-
SD375	Bandiana	6/05/2022	0445_SD375_220506	Normal	EM2208381	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0049	-	-
SD382	Bandiana	24/10/2017	0445N_SD382_0.0_171024	Normal	ES1726816	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	-	-
SD382	Bandiana	3/05/2022	0445_SD382_220503	Normal	EM2208381	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	-	-
SD395	Bandiana	9/10/2017	0445_QC152_171009	Field_D	ES1725705	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0022	-	-
SD395	Bandiana	9/10/2017	0445_SD395_0.0_171010	Normal	ES1725705	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	-	-
SD395	Bandiana	10/10/2017	0445_QC252_171010	Interlab_D	567888	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	<0.05	-	-
SD395	Bandiana	3/11/2019	0445_SD395_0.0_191103	Normal	ES1936497	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0033	-	-
SD395	Bandiana	3/05/2022	0445_SD395_220503	Normal	EM2208382	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0061	-	-
SD396	Bandiana	10/10/2017	0445_SD396_0.0_171010	Normal	ES1725715	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0172	-	-
SD396	Bandiana	3/11/2019	0445_SD396_0.0_191103	Normal	ES1936497	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0582	-	-
SD396	Bandiana	3/05/2022	0445_SD396_220503	Normal	EM2208382	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0413	-	-
SD397	Bandiana	10/10/2017	0445_SD397_0.0_171010	Normal	ES1725715	<0.0006[#2]	<0.0002	<0.0006[#2]	<0.0006[#2]	<0.0006[#2]	<0.0006[#2]	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0678	-	-
SD397	Bandiana	10/10/2017	0445_SD397_0.4_171010	Normal	ES1725715	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	-	-
SD397	Bandiana	10/10/2017	0445_SD397_0.7_171010	Normal	ES1725715	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0059	-	-
SD397	Bandiana	3/11/2019	0445_QC136_191103	Field_D	ES1936497	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0439	-	-
SD397	Bandiana	3/11/2019	0445_SD397_0.0_191103	Normal	ES1936497	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0379	-	-
SD397	Bandiana	3/05/2022	0445_SD397_220503	Normal	EM2208382	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0501	-	-
SD400	Bandiana	10/10/2017	0445_SD400_0.0_171010	Normal	ES1725715	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0036	-	-
SD400	Bandiana	3/11/2019	0445_SD400_0.0_191103	Normal	ES1936497	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0092	-	-
SD400	Bandiana	3/05/2022	0445_SD400_220503	Normal	EM2208383	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0146	-	-
SD412	Bandiana	12/10/2017	0445_SD412_0.0_171012	Normal	ES1725997	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0038	-	-
SD412	Bandiana	6/05/2022	0445_SD412_220506	Normal	EM2208383	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	-	-
SD424	Bandiana	10/10/2017	0445_QC214	Interlab_D	567942	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.05	-	-
SD424	Bandiana	11/10/2017	0445_QC114	Field_D	ES1725716	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0024	-	-
SD424	Bandiana	11/10/2017	0445_SD424_0.0_171011	Normal	ES1725716	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	-	-
SD424	Bandiana	13/10/2017	0445_SD424_0.0_171013	Normal	ES1725997	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0075	-	-
SD424	Bandiana	4/05/2022	0445_SD424_220504	Normal	EM2208383	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0041	-	-
SD463	Bandiana	11/12/2017	0445_SD463_0.0_171211	Normal	ES1731468	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0056	-	-
SD463	Bandiana	4/05/2022	0445_QC110_220504	Field_D	EM2208383	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0091	-	-
SD463	Bandiana	4/05/2022	0445_QC210_220504	Interlab_D	886780	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.05	0.013	0.013
SD463	Bandiana	4/05/2022	0445_SD463_220504	Normal	EM2208383	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0088	-	-

				Lab Report Number	EM2208381	EM2208381		EM2208381	EM2208381		EM2208381	EM2208381		EM2208381	EM2208381	
				Field ID	0445_MW351_220503	0445_QC100_220503	RPD	0445_SW387_220503	0445_QC101_220503	RPD	0445_MW034_220503	0445_QC106_220503	RPD	0445_MW304_220504	0445_QC107_220504	RPD
				Sampled Date	3/05/2022	3/05/2022		3/05/2022	3/05/2022		3/05/2022	3/05/2022		4/05/2022	4/05/2022	
Chem_Group	**ChemName**	**Units**	**LOR**													
	Sum of WA DWER PFAS (n=10)*	ug/L	0.01 : 0.05 (Interlab)	0.02	0.02	0	0.1	0.12	18	3.03	2.78	9	0.15	0.12	22
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.01	0.01	0	0.05	0.04	22	1.57	1.27	21	0.06	0.07	15
	Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	0.06	0.06	0	<0.02	<0.02	0
	Sum of PFHxS and PFOS	µg/L	0.01	0.02	0.02	0	0.1	0.12	18	2.57	2.35	9	0.15	0.12	22
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	0.14	0.13	7	<0.02	<0.02	0
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	0.14	0.14	0	<0.02	<0.02	0
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.01	0.01	0	**0.05**	**0.08**	**46**	1	1.08	8	**0.09**	**0.05**	**57**
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	0.08	0.07	13	<0.02	<0.02	0
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	0.06	0.05	18	<0.02	<0.02	0
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	0.16	0.16	0	<0.02	<0.02	0
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	0.04	0.03	29	<0.02	<0.02	0
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.02	0.02	0	0.1	0.12	18	3.25	2.99	8	0.15	0.12	22

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

			Lab Report Number	EM2208381	EM2208381		EM2208383	EM2208381		EM2208381	EM2208381		EM2208383	EM2208383	
			Field ID	0445_MW342_220506	0445_QC111_220506	**RPD**	0445_SW470_220503	0445_QC103_220504	**RPD**	0445_SW355_220504	0445_QC104_220504	**RPD**	0445_SW462_220505	0445_QC105_220505	**RPD**
			Sampled Date	6/05/2022	6/05/2022		3/05/2022	3/05/2022		4/05/2022	4/05/2022		5/05/2022	5/05/2022	
Chem_Group	**ChemName**	**Units**	**LOR**												
	Sum of WA DWER PFAS (n=10)*	ug/L	0.01 : 0.05 (Interlab)	10.5	10.5	0	**0.45**	**0.73**	**47**	**0.13**	**0.25**	**63**	**0.05**	**0.03**	**50**
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	4	3.97	1	**0.19**	**0.46**	**83**	**0.11**	**0.19**	**53**	**0.03**	**0.02**	**40**
	Perfluorooctanoate (PFOA)	µg/L	0.01	0.16	0.17	6	**<0.01**	**0.02**	**67**	<0.01	0.01	0	<0.01	<0.01	0
	Sum of PFHxS and PFOS	µg/L	0.01	8.59	8.58	0	**0.42**	**0.61**	**37**	**0.13**	**0.24**	**59**	**0.05**	**0.03**	**50**
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.68	0.74	8	**0.03**	**0.02**	**40**	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	0.51	0.53	4	**0.03**	**<0.02**	**40**	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	4.59	4.61	0	**0.23**	**0.15**	**42**	**0.02**	**0.05**	**86**	**0.02**	**0.01**	**67**
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	0.26	0.26	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	0.22	0.22	0	**<0.02**	**0.04**	**67**	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.81	0.75	8	**<0.02**	**0.04**	**67**	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	0.07	0.08	13	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	11.3	11.3	0	**0.48**	**0.73**	**41**	**0.13**	**0.25**	**63**	**0.05**	**0.03**	**50**

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQ
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row hea

			Lab Report Number	EM2208381	886780		EM2208381	886780		EM2208383	886780		EM2208381	886780	
			Field ID	0445_MW351_220503	0445_QC200_220503	**RPD**	0445_SW387_220503	0445_QC201_220503	**RPD**	0445_SW470_220503	0445_QC203_220504	**RPD**	0445_SW355_220504	0445_QC204_220504	**RPD**
			Sampled Date	3/05/2022	3/05/2022		3/05/2022	3/05/2022		3/05/2022	3/05/2022		4/05/2022	4/05/2022	
Chem_Group	**ChemName**	**Units**	**LOR**												
	Sum of WA DWER PFAS (n=10)*	ug/L	0.01 : 0.05 (Interlab)	0.02	<0.05	0	0.1	0.11	10	**0.45**	**0.83**	**59**	**0.13**	**0.37**	**96**
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.01	0.01	0	0.05	0.04	22	**0.19**	**0.54**	**96**	**0.11**	**0.27**	**84**
	Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	**<0.01**	**0.03**	**100**	<0.01	<0.01	0
	Sum of PFHxS and PFOS	µg/L	0.01	0.02	0.02	0	0.1	0.1	0	**0.42**	**0.67**	**46**	**0.13**	**0.32**	**84**
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	0.01	0	0.03	0.03	0	<0.02	0.01	0
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	**0.03**	**0.02**	**40**	<0.02	<0.01	0
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.01	0.01	0	0.05	0.06	18	**0.23**	**0.13**	**56**	**0.02**	**0.05**	**86**
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.05	0	<0.1	<0.05	0	<0.1	<0.05	0	<0.1	<0.05	0
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	**<0.02**	**0.04**	**67**	<0.02	0.02	0
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	**<0.02**	**0.04**	**67**	<0.02	0.02	0
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	0.02	0	<0.02	<0.01	0
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.02	<0.1	0	0.1	0.11	10	**0.48**	**0.87**	**58**	**0.13**	**0.37**	**96**

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQ
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row hea

			Lab Report Number	EM2208383	886780		EM2208381	886780		EM2208381	886780		EM2208381	886780	
			Field ID	0445_SW462_220505	0445_QC205_220505	**RPD**	0445_MW034_220503	0445_QC206_220505	**RPD**	0445_MW304_220504	0445_QC207_220504	**RPD**	0445_MW342_220506	0445_QC211_220506	**RPD**
			Sampled Date	5/05/2022	5/05/2022		3/05/2022	3/05/2022		4/05/2022	4/05/2022		6/05/2022	6/05/2022	
Chem_Group	**ChemName**	**Units**	**LOR**												
	Sum of WA DWER PFAS (n=10)*	ug/L	0.01 : 0.05 (Interlab)	0.05	0.06	18	3.03	3.82	23	0.15	0.16	6	10.5	13.7	26
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.03	0.04	29	1.57	2.1	29	**0.06**	**0.1**	**50**	4	4.9	20
	Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	0	**0.06**	**0.09**	**40**	<0.02	<0.01	0	0.16	0.21	27
	Sum of PFHxS and PFOS	µg/L	0.01	0.05	0.06	18	2.57	3.3	25	0.15	0.16	6	8.59	11.3	27
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	0.14	0.14	0	<0.02	<0.01	0	0.68	0.91	29
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	0.14	0.15	7	<0.02	<0.01	0	**0.51**	**0.75**	**38**
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.02	0.02	0	1	1.2	18	**0.09**	**0.06**	**40**	**4.59**	**6.4**	**33**
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	0.08	0.06	29	<0.02	<0.01	0	0.26	0.28	7
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.05	0	<0.1	<0.05	0	<0.1	<0.05	0	**<0.1**	**0.14**	**33**
	Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	0.06	0.05	18	<0.02	<0.01	0	0.22	0.19	15
	Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	0.16	0.2	22	<0.02	<0.01	0	0.81	0.88	8
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	0.04	0.04	0	<0.02	<0.01	0	0.07	0.07	0
	Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
	Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.05	<0.1	0	3.25	4.09	23	0.15	0.16	6	11.3	15.27	30

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQ
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row hea

Field Duplicates (soil)

			Lab Report Number	EM2208381	EM2208381		EM2208383	EM2208383		EM2208381	886780		EM2208383	886780	
			Field ID	0445_SD323_220504	0445_QC109_220504	**RPD**	0445_SD463_220504	0445_QC110_220504	**RPD**	0445_QC109_220504	0445_QC209_220504	**RPD**	0445_QC110_220504	0445_QC210_220504	**RPD**
			Sampled Date/Time	4/05/2022	4/05/2022		4/05/2022	4/05/2022		7/05/2022	7/05/2022		4/05/2022	4/05/2022	
Chem_Group	**ChemName**	**Units**	**EQL**												
	Moisture Content	%	0.1	43.8	45.9	5	21.1	23.2	9						
Perfluorocarbons	Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002 : 0.005 (Interlab)	0.0167	0.0152	9	0.0085	0.0086	1	0.0152	0.016	5	**0.0086**	**0.013**	**41**
	Perfluorooctanoate (PFOA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Sum of PFHxS and PFOS	mg/kg	0.0002 : 0.005 (Interlab)	0.0173	0.0158	9	0.0088	0.0091	3	0.0158	0.016	1	**0.0091**	**0.013**	**35**
	Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002 : 0.005 (Interlab)	0.0006	0.0006	0	**0.0003**	**0.0005**	**50**	0.0006	<0.005	0	0.0005	<0.005	0
	Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.0002 : 0.005 (Interlab)	0.0004	0.0004	0	<0.0002	<0.0002	0	0.0004	<0.005	0	<0.0002	<0.005	0
	Perfluorobutanoic acid (PFBA)	mg/kg	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.005	0	<0.001	<0.005	0
	Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluorononanoic acid (PFNA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluorodecanoic acid (PFDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002 : 0.005 (Interlab)	**0.0003**	**0.0002**	**40**	<0.0002	<0.0002	0	0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.005	0
	Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002 : 0.005 (Interlab)	0.0004	0.0005	22	<0.0002	<0.0002	0	0.0005	<0.005	0	<0.0002	<0.005	0
	Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.005	0
	Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	0.0002	0	<0.0002	<0.0002	0	0.0002	<0.005	0	<0.0002	<0.005	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.005	0
	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.005	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.005	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.0002 : 0.01 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.01	0	<0.0002	<0.01	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002 : 0.01 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.01	0	<0.0002	<0.01	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.005	0
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005 : 0.01 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.01	0	<0.0005	<0.01	0
	8:2 Fluorotelomer sulfonate (8:2 FtS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.005	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.005	0
	Sum of PFAS	mg/kg	0.0002 : 0.05 (Interlab)	0.0184	0.0171	7	0.0088	0.0091	3	0.0171	<0.05	0	0.0091	<0.05	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Lab Report Number	EM2208381	EM2208381	EM2208381	EM2208381	EM2208649	EM2208649
Field ID	0445_QC300_220503	0445_QC303_220504	0445_QC305_220505	0445_QC307_220506	0445_QC308_220509	0445_QC504_220509
Sampled Date	4/05/2022	5/05/2022 7:38	6/05/2022 7:52	7/05/2022	11/05/2022	11/05/2022 13:22
Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip_B

Chemical Name	**Units**	**LOR**						
Sum of WA DWER PFAS (n=10)*	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

APPENDIX

C

LABORATORY CERTIFICATES

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2209833**		
Client	: **JBS&G AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: Customer Services EM
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: VIC_0445_PFASMGMT_22	Page	: 1 of 2
Order number	: ----	Quote number	: EB2018JBSENV0001 (EN/333/17 - SECONDARY WORK)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: CM		

Dates

Date Samples Received	: 25-May-2022 10:15	Issue Date	: 27-May-2022
Client Requested Due Date	: 01-Jun-2022	Scheduled Reporting Date	: **01-Jun-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 14.3°C
Receipt Detail	:	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2209833-001	16-May-2022 00:00	0445S_SW316_220516	✓
EM2209833-002	16-May-2022 00:00	0445S_SW388_220516	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ESDAT (ESDAT) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ESDAT (ESDAT) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]
- Purchase Order Request Letter (PO_Request) Email [redacted]

ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ESDAT (ESDAT) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]
- Purchase Order Request Letter (PO_Request) Email [redacted]

Chain of Custody

PROJECT NO.: VIC_0445_PFASMGMT_22	LABORATORY BATCH NO.:
PROJECT NAME: Bandiana OMP	SAMPLERS: CM
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)
PHONE: [redacted]0 | Perth [redacted] | Brisbane [redacted] | Melbourne [redacted] | Adelaide [redacted]	
SEND REPORT & INVOICE TO: (1[redacted] (2)[redacted]u; (3[redacted]	

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Please forward this COC and samples to ALS for analysis

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	PFAS (28) – standard level																TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
0445S_SW316_220516	Water	16/5		2x20ml PFAS		X																		
0445S_SW388_220516	Water	16/5		2x20ml PFAS		X																		

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE: OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Controlled Copy (June 2015)

© 2011-2019 JBS&G Australia Pty Ltd

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2209833**	Page	: 1 of 5
Client	: **JBS&G AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: Customer Services EM
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASMGMT_22	Date Samples Received	: 25-May-2022 10:15
Order number	: 61395	Date Analysis Commenced	: 29-May-2022
C-O-C number	: ----	Issue Date	: 01-Jun-2022 14:34
Sampler	: CM		
Site	: ----		
Quote number	: EN/333/17 - SECONDARY WORK		
No. of samples received	: 2		
No. of samples analysed	: 2		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0445S_SW316_220516	0445S_SW388_220516	----	----	----
			Sampling date / time	16-May-2022 00:00	16-May-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2209833-001	EM2209833-002	-------	-------	-------
				Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.10**	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.07**	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.09**	**0.59**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.14**	**0.25**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.04**	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	**0.02**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445S_SW316_220516	0445S_SW388_220516	----	----	----
				Sampling date / time	16-May-2022 00:00	16-May-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2209833-001	EM2209833-002	-------	-------	-------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.23**	**1.07**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.23**	**0.84**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.23**	**1.00**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**114**	**103**	----	----	----
13C8-PFOA	----	0.02	%		**109**	**98.3**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2209833**	Page	: 1 of 4
Client	: **JBS&G AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: Customer Services EM
Address	: [redacted]	[redacted]	[redacted]
[redacted]	[redacted]	Telephone	[redacted]
Project	: VIC_0445_PFASMGMT_22	Date Samples Received	: 25-May-2022
Order number	: 61395	Date Analysis Commenced	: 29-May-2022
C-O-C number	: ----	Issue Date	: 01-Jun-2022
Sampler	: CM		
Site	: ----		
Quote number	: EN/333/17 - SECONDARY WORK		
No. of samples received	: 2		
No. of samples analysed	: 2		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4369853)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	108	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	88.8	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	92.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	92.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	87.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	87.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4369853)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	98.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	94.7	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	89.5	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	101	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	86.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	99.9	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	104	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	98.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4369853)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	89.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	109	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	88.2	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	112	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	102	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4369853)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	82.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	96.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4369853) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	102	70.0	130
EP231P: PFAS Sums (QCLot: 4369853)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2209833**	Page	: 1 of 4
Client	: **JBS&G AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASMGMT_22	Date Samples Received	: 25-May-2022
Site	: ----	Issue Date	: 01-Jun-2022
Sampler	: CM	No. of samples received	: 2
Order number	: 61395	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	16	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	16	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445S_SW316_220516,	0445S_SW388_220516	**16-May-2022**	**31-May-2022**	12-Nov-2022	✓	**31-May-2022**	12-Nov-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0445S_SW316_220516,	0445S_SW388_220516	**16-May-2022**	**31-May-2022**	12-Nov-2022	✓	**31-May-2022**	12-Nov-2022	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0445S_SW316_220516,	0445S_SW388_220516	**16-May-2022**	**31-May-2022**	12-Nov-2022	✓	**31-May-2022**	12-Nov-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445S_SW316_220516,	0445S_SW388_220516	**16-May-2022**	**31-May-2022**	12-Nov-2022	✓	**31-May-2022**	12-Nov-2022	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0445S_SW316_220516,	0445S_SW388_220516	**16-May-2022**	**31-May-2022**	12-Nov-2022	✓	**31-May-2022**	12-Nov-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	16	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	16	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Samples received without CoC

Environmental Division
Melbourne
Work Order Reference
EM2208348

Telephone : 61-3-8549 9600

CLIENT / SENDER:	Cardno/STANTEC
PROJECT:	BM2021 CANBCON0009
CONTACT NAME:	
CONTACT NUMBER:	
CARRIER:	COURIER
CONNOTE REFERENCE:	
SAMPLER:	
NUMBER OF SAMPLES/MATRIX:	2 Asbestos.
Client services notified by:	PFAS water

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	4	5	6	7
OF:	1	2	3	4	5	6	7

SAMPLES RECEIVED BY: [redacted]

DATE/TIME: 9/5, 1511

ANALYSIS RECEIVED BY:

DATE/TIME:

Comments

Old hold 11/5/22.

LAB ID	SAMPLE ID	DATE	MATRIX	NUMBER OF CONTAINERS	Additional Information
	SW 471	3/5			
	SW 382	3/5			
	QC 104	4/5			
	QC 101				
	etc				
			TOTAL		

CHAIN OF CUSTODY

(ALS) COC#: 37048 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana P02

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_OTH019_220505		05/05/2022 09:16 AM	Water	ALS: 2 Non ALS: 0	No	X		

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2208348**	Page	: 1 of 5
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 09-May-2022 15:11
Order number	: -	Date Analysis Commenced	: 13-May-2022
C-O-C number	: 37048	Issue Date	: 17-May-2022 12:23
Sampler	: [redacted]		
Site	: Bandiana P02		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_OTH019_220505	----	----	----	----
			Sampling date / time	05-May-2022 09:16	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2208348-001	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.11**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.04**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_OTH019_220505	----	----	----	----
				Sampling date / time	05-May-2022 09:16	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208348-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.15**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.15**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.15**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	----	----	----	----
13C8-PFOA	----	0.02	%		**91.6**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2208348**	Page	: 1 of 7
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
[redacted]	[redacted]	Contact	: [redacted]
[redacted]	[redacted]	Address	: [redacted]
[redacted]	[redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 09-May-2022
Order number	: -	Date Analysis Commenced	: 13-May-2022
C-O-C number	: 37048	Issue Date	: 17-May-2022
Sampler	: [redacted]		
Site	: Bandiana P02		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4340647)									
EM2208381-026	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.20	0.18	8.3	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.65	0.58	11.4	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EM2208381-037	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.05	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340647)									
EM2208381-026	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340647) - continued									
EM2208381-037	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340647)									
EM2208381-026	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EM2208381-037	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340647)									
EM2208381-026	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340647) - continued									
EM2208381-026	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EM2208381-037	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4340647)									
EM2208381-026	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.97	0.89	8.6	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.85	0.76	11.2	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.97	0.89	8.6	0% - 20%
EM2208381-037	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.08	0.07	13.3	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.08	0.07	13.3	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.08	0.07	13.3	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340647)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	100	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	114	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	106	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	99.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	97.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340647)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	92.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.5	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	101	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	111	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	86.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	99.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	96.9	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	86.5	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	106	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340647)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	104	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	93.8	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	94.8	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	107	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	99.7	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	117	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	104	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340647)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	105	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	106	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340647) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.7	70.0	130
EP231P: PFAS Sums (QCLot: 4340647)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340647)							
EM2208381-034	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	116	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	113	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	112	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	107	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	137	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	88.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340647)							
EM2208381-034	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	91.2	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	113	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	94.4	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	111	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	104	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	113	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	76.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	96.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	90.1	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	77.1	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	95.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340647)							
EM2208381-034	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	98.9	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	70.7	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	72.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340647) - continued							
EM2208381-034	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	92.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	85.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	108	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	91.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340647)							
EM2208381-034	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	103	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	113	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	116	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	74.7	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2208348**	Page	: 1 of 4
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
[redacted]	: [redacted]	Telephone	: [redacted]9
Project	: VIC_0445_PFASOMP	Date Samples Received	: 09-May-2022
Site	: Bandiana P02	Issue Date	: 17-May-2022
Sampler	: [redacted]	No. of samples received	: 1
Order number	: -	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_OTH019_220505	**05-May-2022**	**16-May-2022**	01-Nov-2022	✓	**16-May-2022**	01-Nov-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0445_OTH019_220505	**05-May-2022**	**16-May-2022**	01-Nov-2022	✓	**16-May-2022**	01-Nov-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0445_OTH019_220505	**05-May-2022**	**16-May-2022**	01-Nov-2022	✓	**16-May-2022**	01-Nov-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_OTH019_220505	**05-May-2022**	**16-May-2022**	01-Nov-2022	✓	**16-May-2022**	01-Nov-2022	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_OTH019_220505	**05-May-2022**	**16-May-2022**	01-Nov-2022	✓	**16-May-2022**	01-Nov-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Samples received without CoC

CLIENT / SENDER:	Cardno / STANTEC
PROJECT:	RM 2011 CANBCON 00004
CONTACT NAME:	
CONTACT NUMBER:	
CARRIER:	Courier
CONNOTE REFERENCE:	
SAMPLER:	
NUMBER OF SAMPLES/MATRIX:	2 Bottles.
Client services notified by:	PFAS water

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	4	5	6	7
OF:	1	2	3	4	5	6	7

SAMPLES RECEIVED BY: [redacted]

DATE/TIME: 11/5, 13:11

ANALYSIS RECEIVED BY:

DATE/TIME:

Comments

Environmental Division
Melbourne
Work Order Reference
EM2208381

Telephone : + 61-3-8549 9600

LAB ID	SAMPLE DETAILS: SAMPLE ID	DATE	MATRIX	NUMBER OF CONTAINERS	Additional Information
	SW 471	3/5			
	SW 382	3/5			
	QC 104	4/5			
	QC 101				
	etc				
			TOTAL		

CHAIN OF CUSTODY

ALS COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_MW009_220505		05/05/2022 09:32 AM	Water	ALS: 2 Non ALS: 0	No		X			
002	0445_MW012_220505		05/05/2022 08:13 AM	Water	ALS: 2 Non ALS: 0	No		X			
003	0445_MW018_220505		05/05/2022 09:33 AM	Water	ALS: 2 Non ALS: 0	No		X			
004	0445_MW020_220503		03/05/2022 03:38 PM	Water	ALS: 2 Non ALS: 0	No		X			
005	0445_MW029_220505		05/05/2022 08:47 AM	Water	ALS: 2 Non ALS: 0	No		X			
006	0445_MW034_220503		03/05/2022 04:05 PM	Water	ALS: 2 Non ALS: 0	No		X			
007	0445_MW035_220503		03/05/2022 10:24 AM	Water	ALS: 2 Non ALS: 0	No		X			
008	0445_MW042_220503		03/05/2022 03:20 PM	Water	ALS: 2 Non ALS: 0	No		X			
009	0445_MW043_220503		03/05/2022 03:22 PM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

(ALS) COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_MW046D_220503		03/05/2022 04:25 PM	Water	ALS: 2 Non ALS: 0	No		X			
011	0445_MW046I_220503		04/05/2022 07:42 AM	Water	ALS: 6 Non ALS: 0	No		X			
012	0445_MW052_220505		05/05/2022 08:22 AM	Water	ALS: 2 Non ALS: 0	No		X			
013	0445_MW345_220506		06/05/2022 09:54 AM	Water	ALS: 2 Non ALS: 0	No		X			
014	0445_MW346_220506		06/05/2022 08:37 AM	Water	ALS: 2 Non ALS: 0	No		X			
015	0445_MW350_D_220503		03/05/2022 04:17 PM	Water	ALS: 2 Non ALS: 0	No		X			
016	0445_MW350_S_220506		06/05/2022 12:38 PM	Water	ALS: 2 Non ALS: 0	No		X			
017	0445_MW351_220503	normal	03/05/2022 09:51 AM	Water	ALS: 2 Non ALS: 0	No		X			
018	0445_MW352_220503		03/05/2022 09:56 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
019	0445_MW353_220505		05/05/2022 10:12 AM	Water	ALS: 2 Non ALS: 0	No		X			
020	0445_MW354_220505		05/05/2022 08:38 AM	Water	ALS: 2 Non ALS: 0	No		X			
021	0445_MW361_220506		07/05/2022 08:54 AM	Water	ALS: 2 Non ALS: 0	No		X			
022	0445_MW403_220505		05/05/2022 04:18 PM	Water	ALS: 2 Non ALS: 0	No		X			
023	0445_MW404_220505		05/05/2022 04:08 PM	Water	ALS: 2 Non ALS: 0	No		X			
024	0445_SW321_220504		04/05/2022 09:36 AM	Water	ALS: 2 Non ALS: 0	No		X			
025	0445_SW322_220504		04/05/2022 01:21 PM	Water	ALS: 2 Non ALS: 0	No		X			
026	0445_SW323_220504	internal lab qc	04/05/2022 01:51 PM	Water	ALS: 6 Non ALS: 0	No		X			
027	0445_SW324_220504		04/05/2022 09:39 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

(ALS) COC#: 37045 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
028	0445_SW326_220504		04/05/2022 09:06 AM	Water	ALS: 2 Non ALS: 0	No		X			
029	0445_SW333_220504		04/05/2022 09:03 AM	Water	ALS: 2 Non ALS: 0	No		X			
030	0445_SW336_220504		04/05/2022 12:23 PM	Water	ALS: 2 Non ALS: 0	No		X			
031	0445_SW338_220504		04/05/2022 01:31 PM	Water	ALS: 2 Non ALS: 0	No		X			
032	0445_SW346_220504		04/05/2022 04:28 PM	Water	ALS: 2 Non ALS: 0	No		X			
033	0445_SW349_220504		04/05/2022 04:20 PM	Water	ALS: 2 Non ALS: 0	No		X			
034	0445_SW355_220504	internal lab qc	04/05/2022 04:57 PM	Water	ALS: 6 Non ALS: 0	No		X			
035	0445_SW370_220506		06/05/2022 09:54 AM	Water	ALS: 2 Non ALS: 0	No		X			
036	0445_SW374_220506		06/05/2022 09:53 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 37045 ALS Laboratory: EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
037	0445_SW375_220506	internal lab qc	06/05/2022 09:03 AM	Water	ALS: 6 Non ALS: 0	No		X			
038	0445_SW382_220503	internal lab qc	03/05/2022 09:59 AM	Water	ALS: 6 Non ALS: 0	No		X			
039	0445_SW387_220503		03/05/2022 11:33 AM	Water	ALS: 2 Non ALS: 0	No		X			
040	0445_SD323_220504_0.10 -0.15		04/05/2022 01:52 PM	Soil	ALS: 1 Non ALS: 0	No			X		
041	0445_SD346_220504		04/05/2022 04:28 PM	Soil	ALS: 1 Non ALS: 0	No			X		
042	0445_SD355_220504		07/05/2022 08:22 AM	Soil	ALS: 1 Non ALS: 0	No			X		
043	0445_SD375_220506_0.10 -0.20		06/05/2022 09:02 AM	Soil	ALS: 1 Non ALS: 0	No			X		
044	0445_SD382_220503_0.10		03/05/2022 09:52 AM	Soil	ALS: 1 Non ALS: 0	No			X		
045	0445_QC100_220503		03/05/2022 09:55 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 37045 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
046	0445_QC101_220503		03/05/2022 11:35 AM	Water	ALS: 2 Non ALS: 0	No		X			
047	0445_QC106_220503		03/05/2022 04:06 PM	Water	ALS: 2 Non ALS: 0	No		X			
048	0445_QC300_220503		04/05/2022 07:34 AM	Water	ALS: 2 Non ALS: 0	No		X			
049	0445_QC301_220503		04/05/2022 07:35 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
050	0445_MW312_220504		04/05/2022 01:05 PM	Water	ALS: 6 Non ALS: 0	No		X			
051	0445_SD323_220504_0.10-0.15		04/05/2022 01:53 PM	Soil	ALS: 1 Non ALS: 0	No			X		
052	0445_MW307_220504		04/05/2022 01:30 PM	Water	ALS: 2 Non ALS: 0	No		X			
053	0445_MW304_220504		04/05/2022 01:32 PM	Water	ALS: 2 Non ALS: 0	No		X			
054	0445_QC107_220504		04/05/2022 01:33 PM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

(ALS) COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal Intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
055	0445_QC302_220504		05/05/2022 07:36 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
056	0445_QC303_220504		05/05/2022 07:38 AM	Water	ALS: 2 Non ALS: 0	No		X			
057	0445_QC304_220505		06/05/2022 07:51 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
058	0445_QC305_220505		06/05/2022 07:52 AM	Water	ALS: 2 Non ALS: 0	No		X			
059	0445_MW342_220506		06/05/2022 10:44 AM	Water	ALS: 2 Non ALS: 0	No		X			
060	0445_QC111_220506		06/05/2022 10:45 AM	Water	ALS: 2 Non ALS: 0	No		X			
061	0445_QC306_220506		07/05/2022 09:18 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
062	0445_QC307_220506		07/05/2022 09:21 AM	Water	ALS: 2 Non ALS: 0	No		X			
063	0445_QC103_220504		07/05/2022 09:52 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

(ALS) COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
064	0445_QC104_220504		07/05/2022 09:54 AM	Water	ALS: 2 Non ALS: 0	No		X			
065	0445_QC109_220504		07/05/2022 09:56 AM	Soil	ALS: 1 Non ALS: 0	No			X		
066	0445_QC500_220506		07/05/2022 10:10 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
067	0445_QC501_220506		07/05/2022 10:11 AM	Water	ALS: 2 Non ALS: 0	Yes					

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2208381**	Page	: 1 of 33
Amendment	: **1**		
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 09-May-2022 15:11
Order number	: -	Date Analysis Commenced	: 13-May-2022
C-O-C number	: 37045	Issue Date	: 02-Jun-2022 10:26
Sampler	: [redacted]		
Site	: Bandiana On Base		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 67		
No. of samples analysed	: 60		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Laboratory Coordinator	[redacted]
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X: Samples (EM2208381) required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Samples EM2208381 required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- Amendment (02/06/2022): This report has been amended as a result of a request to change sample identification numbers (IDs) received from Abe Wright on 01/06/2022, for samples EM2208381 #40,43,44,51. All analysis results are as per the previous report.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW009_220505	0445_MW012_220505	0445_MW018_220505	0445_MW020_220503	0445_MW029_220505
			Sampling date / time	05-May-2022 09:32	05-May-2022 08:13	05-May-2022 09:33	03-May-2022 15:38	05-May-2022 08:47
Compound	CAS Number	LOR	Unit	EM2208381-001	EM2208381-002	EM2208381-003	EM2208381-004	EM2208381-005
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.99**	**0.02**	**0.06**	**0.13**	**0.18**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**1.11**	**0.03**	**0.05**	**0.15**	**0.14**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**6.19**	**0.45**	**0.33**	**1.48**	**0.64**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.37**	<0.02	<0.02	**0.07**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**3.50**	**0.09**	**0.33**	**1.29**	**0.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.2**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.40**	<0.02	<0.02	**0.05**	**0.22**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**1.32**	**0.03**	<0.02	**0.17**	**0.29**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.29**	<0.02	<0.02	**0.02**	**0.10**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.44**	<0.01	<0.01	**0.06**	**0.05**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW009_220505	0445_MW012_220505	0445_MW018_220505	0445_MW020_220503	0445_MW029_220505
				Sampling date / time	05-May-2022 09:32	05-May-2022 08:13	05-May-2022 09:33	03-May-2022 15:38	05-May-2022 08:47
Compound	CAS Number	LOR	Unit		EM2208381-001	EM2208381-002	EM2208381-003	EM2208381-004	EM2208381-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.08**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**14.9**	**0.62**	**0.77**	**3.42**	**2.26**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**9.69**	**0.54**	**0.66**	**2.77**	**1.28**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**13.4**	**0.59**	**0.72**	**3.20**	**2.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	**107**	**107**	**99.9**	**104**
13C8-PFOA	----	0.02	%		**96.0**	**91.6**	**95.8**	**94.9**	**93.0**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW034_220503	0445_MW035_220503	0445_MW046D_220503	0445_MW046I_220503	0445_MW052_220505
			Sampling date / time	03-May-2022 16:05	03-May-2022 10:24	03-May-2022 16:25	04-May-2022 07:42	05-May-2022 08:22
Compound	CAS Number	LOR	Unit	EM2208381-006	EM2208381-007	EM2208381-010	EM2208381-011	EM2208381-012
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.14**	**1.16**	**0.37**	**0.20**	**1.31**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.14**	**1.27**	**0.30**	**0.20**	**1.20**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**1.00**	**7.38**	**2.09**	**1.42**	**5.08**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.08**	**0.49**	**0.17**	**0.11**	**0.32**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**1.57**	**5.07**	**2.88**	**2.17**	**9.31**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	**0.2**	<0.1	<0.1	**0.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.06**	**0.48**	**0.14**	**0.08**	**0.50**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.16**	**1.62**	**0.41**	**0.24**	**2.14**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.04**	**0.35**	**0.09**	**0.06**	**0.61**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.06**	**0.59**	**0.16**	**0.10**	**0.63**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW034_220503	0445_MW035_220503	0445_MW046D_220503	0445_MW046I_220503	0445_MW052_220505
				Sampling date / time	03-May-2022 16:05	03-May-2022 10:24	03-May-2022 16:25	04-May-2022 07:42	05-May-2022 08:22
Compound	CAS Number	LOR	Unit		EM2208381-006	EM2208381-007	EM2208381-010	EM2208381-011	EM2208381-012
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.10**	**0.09**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**3.25**	**18.7**	**6.70**	**4.58**	**21.4**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.57**	**12.4**	**4.97**	**3.59**	**14.4**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**3.03**	**17.0**	**6.23**	**4.27**	**19.9**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**109**	**108**	**103**	**102**	**111**
13C8-PFOA	----	0.02	%		**97.3**	**96.1**	**96.0**	**94.7**	**94.1**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW345_220506	0445_MW346_220506	0445_MW350_S_220506	0445_MW351_220503 normal	0445_MW352_220503
			Sampling date / time	06-May-2022 09:54	06-May-2022 08:37	06-May-2022 12:38	03-May-2022 09:51	03-May-2022 09:56
Compound	CAS Number	LOR	Unit	EM2208381-013	EM2208381-014	EM2208381-016	EM2208381-017	EM2208381-018
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.04**	<0.02	**2.43**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	<0.02	**2.69**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.21**	<0.01	**25.6**	**0.01**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	**2.32**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.03**	<0.01	**17.8**	**0.01**	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	**0.8**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**1.71**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	**4.45**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	**1.33**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**2.67**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	**0.02**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW345_220506	0445_MW346_220506	0445_MW350_S_220506	0445_MW351_220503 normal	0445_MW352_220503
				Sampling date / time	06-May-2022 09:54	06-May-2022 08:37	06-May-2022 12:38	03-May-2022 09:51	03-May-2022 09:56
Compound	CAS Number	LOR	Unit		EM2208381-013	EM2208381-014	EM2208381-016	EM2208381-017	EM2208381-018
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**1.22**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.31**	<0.01	**63.0**	**0.02**	**0.01**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.24**	<0.01	**43.4**	**0.02**	**0.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.28**	<0.01	**58.0**	**0.02**	**0.01**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	**102**	**103**	**110**	**105**
13C8-PFOA	----	0.02	%		**93.5**	**98.6**	**94.6**	**93.6**	**94.3**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_220505	0445_MW354_220505	0445_MW361_220506	0445_MW403_220505	0445_MW404_220505
				Sampling date / time	05-May-2022 10:12	05-May-2022 08:38	07-May-2022 08:54	05-May-2022 16:18	05-May-2022 16:08
Compound	CAS Number	LOR	Unit		EM2208381-019	EM2208381-020	EM2208381-021	EM2208381-022	EM2208381-023
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	**0.02**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	**0.14**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	**0.07**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	<0.02	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.40**	**0.03**	----	**5.98**	**7.16**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.40**	<0.02	----	**7.17**	**9.16**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**2.83**	**0.10**	----	**46.0**	**45.2**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.21**	<0.02	----	**4.26**	**4.18**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.10**	**0.11**	----	**52.7**	**56.2**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	----	<0.10	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	**0.01**	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_220505	0445_MW354_220505	0445_MW361_220506	0445_MW403_220505	0445_MW404_220505
				Sampling date / time	05-May-2022 10:12	05-May-2022 08:38	07-May-2022 08:54	05-May-2022 16:18	05-May-2022 16:08
Compound	CAS Number	LOR	Unit		EM2208381-019	EM2208381-020	EM2208381-021	EM2208381-022	EM2208381-023
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	<0.05	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	**1.3**	**1.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.11**	<0.02	----	**2.40**	**2.63**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.37**	<0.02	----	**11.2**	**13.3**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.09**	<0.02	----	**1.66**	**2.80**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.18**	<0.01	----	**3.42**	**4.02**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	**0.06**	<0.04
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_220505	0445_MW354_220505	0445_MW361_220506	0445_MW403_220505	0445_MW404_220505
				Sampling date / time	05-May-2022 10:12	05-May-2022 08:38	07-May-2022 08:54	05-May-2022 16:18	05-May-2022 16:08
Compound	CAS Number	LOR	Unit		EM2208381-019	EM2208381-020	EM2208381-021	EM2208381-022	EM2208381-023
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	<0.05	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	**0.95**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	----	**0.24**	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_220505	0445_MW354_220505	0445_MW361_220506	0445_MW403_220505	0445_MW404_220505
				Sampling date / time	05-May-2022 10:12	05-May-2022 08:38	07-May-2022 08:54	05-May-2022 16:18	05-May-2022 16:08
Compound	CAS Number	LOR	Unit		EM2208381-019	EM2208381-020	EM2208381-021	EM2208381-022	EM2208381-023
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	----	0.21	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	----	0.24	----	----
Sum of PFAS	----	0.01	µg/L		7.69	0.24	----	137	146
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		5.93	0.21	----	98.7	101
Sum of PFAS (WA DER List)	----	0.01	µg/L		7.08	0.24	----	126	132
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		105	110	----	94.5	107
13C4-PFOS	----	0.02	%		----	----	105	----	----
13C8-PFOA	----	0.02	%		96.3	93.2	----	100	97.7
13C8-PFOA	----	0.02	%		----	----	99.2	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_QC100_220503	0445_QC106_220503	0445_MW312_220504	0445_MW307_220504	0445_MW304_220504
			Sampling date / time	03-May-2022 09:55	03-May-2022 16:06	04-May-2022 13:05	04-May-2022 13:30	04-May-2022 13:32
Compound	CAS Number	LOR	Unit	EM2208381-045	EM2208381-047	EM2208381-050	EM2208381-052	EM2208381-053
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.13**	<0.02	**119**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.14**	<0.02	**115**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.01**	**1.08**	**0.10**	**555**	**0.09**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.07**	<0.02	**55.6**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.01**	**1.27**	<0.01	**88.8**	**0.06**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	**16.1**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	**0.05**	<0.02	**72.7**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.16**	<0.02	**221**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.03**	<0.02	**35.5**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	**0.06**	<0.01	**49.4**	<0.02
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	**0.62**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.09	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.09	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.09	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_QC100_220503	0445_QC106_220503	0445_MW312_220504	0445_MW307_220504	0445_MW304_220504
				Sampling date / time	03-May-2022 09:55	03-May-2022 16:06	04-May-2022 13:05	04-May-2022 13:30	04-May-2022 13:32
Compound	CAS Number	LOR	Unit		EM2208381-045	EM2208381-047	EM2208381-050	EM2208381-052	EM2208381-053
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	**1.10**	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**116**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.02**	**2.99**	**0.10**	**1440**	**0.15**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	**2.35**	**0.10**	**644**	**0.15**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	**2.78**	**0.10**	**1270**	**0.15**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.2**	**89.1**	**110**	**92.4**	**99.6**
13C8-PFOA	----	0.02	%		**94.4**	**95.5**	**97.9**	**112**	**105**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_QC107_220504	0445_MW342_220506	0445_QC111_220506	----	----
			Sampling date / time	04-May-2022 13:33	06-May-2022 10:44	06-May-2022 10:45	----	----
Compound	CAS Number	LOR	Unit	EM2208381-054	EM2208381-059	EM2208381-060	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.68**	**0.74**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.51**	**0.53**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.05**	**4.59**	**4.61**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.26**	**0.26**	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.07**	**4.00**	**3.97**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	**0.22**	**0.22**	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.81**	**0.75**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.07**	**0.08**	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.02	**0.16**	**0.17**	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_QC107_220504	0445_MW342_220506	0445_QC111_220506	----	----
				Sampling date / time	04-May-2022 13:33	06-May-2022 10:44	06-May-2022 10:45	----	----
Compound	CAS Number	LOR	Unit		EM2208381-054	EM2208381-059	EM2208381-060	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.12**	**11.3**	**11.3**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.12**	**8.59**	**8.58**	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.12**	**10.5**	**10.5**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.4**	**107**	**119**	----	----
13C8-PFOA	----	0.02	%		**101**	**99.8**	**96.5**	----	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)			Sample ID	0445_QC300_220503	0445_QC303_220504	0445_QC305_220505	0445_QC307_220506	----
			Sampling date / time	04-May-2022 07:34	05-May-2022 07:38	06-May-2022 07:52	07-May-2022 09:21	----
Compound	CAS Number	LOR	Unit	EM2208381-048	EM2208381-056	EM2208381-058	EM2208381-062	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)			Sample ID	0445_QC300_220503	0445_QC303_220504	0445_QC305_220505	0445_QC307_220506	----
			Sampling date / time	04-May-2022 07:34	05-May-2022 07:38	06-May-2022 07:52	07-May-2022 09:21	----
Compound	CAS Number	LOR	Unit	EM2208381-048	EM2208381-056	EM2208381-058	EM2208381-062	--------
				Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**106**	**102**	**103**	**100**	----
13C8-PFOA	----	0.02	%	**92.0**	**96.1**	**96.3**	**97.7**	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0445_SD323_220504	0445_SD346_220504	0445_SD355_220504	0445_SD375_220506	0445_SD382_220503
			Sampling date / time	04-May-2022 13:52	04-May-2022 16:28	07-May-2022 08:22	06-May-2022 09:02	03-May-2022 09:52
Compound	CAS Number	LOR	Unit	EM2208381-040	EM2208381-041	EM2208381-042	EM2208381-043	EM2208381-044
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**43.8**	**24.2**	**21.8**	**6.7**	**30.9**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0006**	**0.0002**	<0.0002	**0.0002**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0167**	**0.0039**	**0.0010**	**0.0042**	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0004**	**0.0002**	<0.0002	**0.0005**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0004**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0445_SD323_220504	0445_SD346_220504	0445_SD355_220504	0445_SD375_220506	0445_SD382_220503
				Sampling date / time	04-May-2022 13:52	04-May-2022 16:28	07-May-2022 08:22	06-May-2022 09:02	03-May-2022 09:52
Compound	CAS Number	LOR	Unit		EM2208381-040	EM2208381-041	EM2208381-042	EM2208381-043	EM2208381-044
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0184**	**0.0043**	**0.0010**	**0.0049**	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0173**	**0.0041**	**0.0010**	**0.0044**	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0173**	**0.0041**	**0.0010**	**0.0044**	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**93.1**	**109**	**91.4**	**70.5**	**89.3**
13C8-PFOA	----	0.0002	%		**92.2**	**112**	**99.8**	**69.0**	**105**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0445_QC109_220504	----	----	----	----
			Sampling date / time	07-May-2022 09:56	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2208381-065	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**45.9**	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0006**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0152**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0004**	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0002**	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0005**	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	**0.0002**	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0445_QC109_220504	----	----	----	----
				Sampling date / time	07-May-2022 09:56	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208381-065	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0171**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0158**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0158**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**88.2**	----	----	----	----
13C8-PFOA	----	0.0002	%		**97.2**	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_MW042_220503	0445_MW043_220503	0445_MW350_D_220503	0445_SW321_220504	0445_SW322_220504
			Sampling date / time	03-May-2022 15:20	03-May-2022 15:22	03-May-2022 16:17	04-May-2022 09:36	04-May-2022 13:21
Compound	CAS Number	LOR	Unit	EM2208381-008	EM2208381-009	EM2208381-015	EM2208381-024	EM2208381-025
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**1.42**	**1.52**	**0.10**	**0.05**	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**1.57**	**1.63**	**0.04**	**0.05**	**0.06**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**9.35**	**9.65**	**0.25**	**0.96**	**1.04**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.56**	**0.59**	**0.02**	**0.10**	**0.11**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**6.03**	**6.91**	**0.28**	**6.13**	**6.97**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.3**	**0.3**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.59**	**0.64**	<0.02	**0.02**	**0.02**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**2.02**	**2.04**	**0.04**	**0.11**	**0.12**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.43**	**0.44**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.66**	**0.70**	**0.02**	**0.05**	**0.06**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_MW042_220503	0445_MW043_220503	0445_MW350_D_220503	0445_SW321_220504	0445_SW322_220504
				Sampling date / time	03-May-2022 15:20	03-May-2022 15:22	03-May-2022 16:17	04-May-2022 09:36	04-May-2022 13:21
Compound	CAS Number	LOR	Unit		EM2208381-008	EM2208381-009	EM2208381-015	EM2208381-024	EM2208381-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.18**	**0.24**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**23.1**	**24.7**	**0.75**	**7.47**	**8.42**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**15.4**	**16.6**	**0.53**	**7.09**	**8.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**21.0**	**22.4**	**0.69**	**7.32**	**8.25**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**106**	**98.4**	**102**	**103**
13C8-PFOA	----	0.02	%		**91.7**	**93.1**	**94.1**	**93.3**	**96.9**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW323_220504 internal lab qc	0445_SW324_220504	0445_SW326_220504	0445_SW333_220504	0445_SW336_220504
			Sampling date / time	04-May-2022 13:51	04-May-2022 09:39	04-May-2022 09:06	04-May-2022 09:03	04-May-2022 12:23
Compound	CAS Number	LOR	Unit	EM2208381-026	EM2208381-027	EM2208381-028	EM2208381-029	EM2208381-030
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	**0.14**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.11**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.20**	**0.24**	**0.09**	**0.02**	**0.54**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.65**	**0.96**	**0.60**	**0.11**	**7.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.96**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.03**	**0.04**	**0.04**	<0.02	**0.44**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.04**	**0.04**	**0.02**	<0.02	**0.95**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	**0.25**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	**0.03**	**0.01**	<0.01	**0.35**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.16**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.14**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.23**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.24**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.08**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.09
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.11**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.09
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.09

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW323_220504 internal lab qc	0445_SW324_220504	0445_SW326_220504	0445_SW333_220504	0445_SW336_220504
				Sampling date / time	04-May-2022 13:51	04-May-2022 09:39	04-May-2022 09:06	04-May-2022 09:03	04-May-2022 12:23
Compound	CAS Number	LOR	Unit		EM2208381-026	EM2208381-027	EM2208381-028	EM2208381-029	EM2208381-030
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.09
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.09
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.04
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.04
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.90**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**1.44**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**1.19**
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.97**	**1.33**	**0.76**	**0.13**	**15.9**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.85**	**1.20**	**0.69**	**0.13**	**8.18**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.97**	**1.33**	**0.76**	**0.13**	**12.6**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.4**	**99.2**	**105**	**97.2**	**82.0**
13C8-PFOA	----	0.02	%		**91.1**	**91.2**	**96.5**	**94.3**	**77.8**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW338_220504	0445_SW346_220504	0445_SW349_220504	0445_SW355_220504 internal lab qc	0445_SW370_220506
			Sampling date / time	04-May-2022 13:31	04-May-2022 16:28	04-May-2022 16:20	04-May-2022 16:57	06-May-2022 09:54
Compound	CAS Number	LOR	Unit	EM2208381-031	EM2208381-032	EM2208381-033	EM2208381-034	EM2208381-035
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.03**	**0.04**	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.24**	**0.17**	**0.13**	**0.02**	**0.03**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.76**	**0.69**	**0.48**	**0.11**	**0.10**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.04**	**0.04**	**0.04**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.11**	**0.05**	**0.04**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.04**	**0.04**	**0.02**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW338_220504	0445_SW346_220504	0445_SW349_220504	0445_SW355_220504 internal lab qc	0445_SW370_220506
				Sampling date / time	04-May-2022 13:31	04-May-2022 16:28	04-May-2022 16:20	04-May-2022 16:57	06-May-2022 09:54
Compound	CAS Number	LOR	Unit		EM2208381-031	EM2208381-032	EM2208381-033	EM2208381-034	EM2208381-035
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.25**	**1.05**	**0.74**	**0.13**	**0.13**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.00**	**0.86**	**0.61**	**0.13**	**0.13**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.22**	**1.05**	**0.74**	**0.13**	**0.13**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.0**	**95.2**	**100**	**98.0**	**101**
13C8-PFOA	----	0.02	%		**92.1**	**90.2**	**95.8**	**89.7**	**96.6**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW374_220506	0445_SW375_220506 internal lab qc	0445_SW382_220503 internal lab qc	0445_SW387_220503	0445_QC101_220503
			Sampling date / time	06-May-2022 09:53	06-May-2022 09:03	03-May-2022 09:59	03-May-2022 11:33	03-May-2022 11:35
Compound	CAS Number	LOR	Unit	EM2208381-036	EM2208381-037	EM2208381-038	EM2208381-039	EM2208381-046
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.02**	**0.02**	<0.01	**0.05**	**0.08**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.05**	**0.06**	<0.01	**0.05**	**0.04**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW374_220506	0445_SW375_220506 internal lab qc	0445_SW382_220503 internal lab qc	0445_SW387_220503	0445_QC101_220503
				Sampling date / time	06-May-2022 09:53	06-May-2022 09:03	03-May-2022 09:59	03-May-2022 11:33	03-May-2022 11:35
Compound	CAS Number	LOR	Unit		EM2208381-036	EM2208381-037	EM2208381-038	EM2208381-039	EM2208381-046
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.07**	**0.08**	<0.01	**0.10**	**0.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	**0.08**	<0.01	**0.10**	**0.12**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.07**	**0.08**	<0.01	**0.10**	**0.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**99.6**	**108**	**95.9**	**92.5**
13C8-PFOA	----	0.02	%		**96.2**	**96.0**	**93.1**	**95.2**	**96.2**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_QC103_220504	0445_QC104_220504	----	----	----
			Sampling date / time	07-May-2022 09:52	07-May-2022 09:54	----	----	----
Compound	CAS Number	LOR	Unit	EM2208381-063	EM2208381-064	--------	--------	--------
				Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.02**	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.15**	**0.05**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.46**	**0.19**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.04**	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.04**	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	**0.01**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_QC103_220504	0445_QC104_220504	----	----	----
				Sampling date / time	07-May-2022 09:52	07-May-2022 09:54	----	----	----
Compound	CAS Number	LOR	Unit		EM2208381-063	EM2208381-064	-------	-------	-------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.73**	**0.25**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.61**	**0.24**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.73**	**0.25**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.4**	**107**	----	----	----
13C8-PFOA	----	0.02	%		**98.1**	**98.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: GROUNDWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: RINSATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: SURFACE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2208381**	Page	: o f 7oL
Amendment	: **1**		
i lreEy	: **DONT NOT USE - LOG UNDER MWHAUS**	bat f rayf rC	: v Emmf ED eEyal Mmmsnf E c elt f urEe
i f EyaAy	: [redacted]	[redacted]	[redacted]
BVVress	: [redacted]	BVVress	[redacted]
[redacted]	[redacted]	Teleh- f Ee	[redacted]
Prf jeAy	: 2G _0pp5_PFBNUc P	Maye NaDhles l eAemeV	: 0L-c aC-1011
UrVer EuDt er	: -	Maye BEalOsns i f DDeEAeV	: o4-c aC-1011
i -U-i EuDt er	: 4O0p5	Gsue Maye	: 01-kuE-1011
NaDhler	: [redacted]		
Nnye	: WaEVmaEa UE Wase		
Quf ye EuDt er	: NY/o4L/oL_WaEVmaEa		
3f . f 7saDhles reAemeV	: 8O		
3f . f 7saDhles aEalOseV	: 80		

T- ns rehf ry suherseVes aEC hremmf us rehf ry(s) wny- y- ns re7ereEAe. l esulys ahhlC yf y- e saDhle(s) as sut DnyeV, uEless y- e saDhlnEg was Af EVuAyeV t C BbN. T- ns Vf AuDeEy s- all Ef y t e rehrf VuAeV, exAehynE 7ull.

T- ns QualnyCi f Eyrf l l ehf ry Af EyanEs y- e 7f llf wnEg nE7f rDayf E:

- bat f rayf rCMuhlnAaye (MKP) l ehf ry; l elaynne PerAeEyage Mn7ereEAe (l PM) aEV BAAehyaEAe bnDns
- c ey- f V WaEd (c W) aEV bat f rayf rCi f Eyrf l Nhnde (bi N) l ehf ry; l eAf nerCaEV BAAehyaEAe bnDns
- c aynx Nhnde (c N) l ehf ry; l eAf nerCaEV BAAehyaEAe bnDns

Signatories

T- ns Vf AuDeEy- as t eeE eleAyrf EnAallCsngEeV t Cy- e auy- f nzeV sngEayf rnes t elf w. v leAyrf EnAsngEnEg ns AarneV f uynE Af DhlnaEAe wny- hrf AeVures sheAnneV nE 1o i Fl Paryoo.

Signatories	*Position*	*Accreditation Category*
[redacted]	bat f rayf rCi f f rVnEayf r	[redacted]
[redacted]	NeEnf r UrgaEnAi - eDnsy	[redacted]

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

General Comments

T-e aEalOyAal hrf AeVures useV t C BbN - ame t eeE VemelfheV 7ff D esyat lns-eV nEyerEayfiEallC reAfgErseV hrf AeVures suA- as y-f se hut lns-eV t C y-e KNv PB, BPHB, BN aEV 3vPc . GE - f use VemelfheV hrf AeVures are 7ullCmalnVayeV aEV are f 7yeE ayy-e AlneEyrequesy.

R-ere Df nsyure VeyerDrnEayfiE-as t eeE her7frDeV, resulys are rehf nyeV f E a VrCweng-yt asns.

R-ere a rehf nyeV less y-aE (<) resuly ns -ng-er y-aE y-e bUI , y-ns DaC t e Vue yf hrnDarC saDhle exyraAy/Vngesyaye Vnluyfi E aEV/f r nEsu7ffAneEy saDhle 7f r aEalOsns. R-ere y-e bUI f 7 a rehf nyeV resuly Vn7ers 7ff D syaEVarV bUI , y-ns DaCt e Vue yf -ng- Df nsyure Af EyeEy, nEsu7ffAneEysaDhle (reVuAeV weng-yeDhlf CeV) f r Dayrnx nEyer7ereEAe.

SeC: BEf ECDf us = I e7ers yf saDhles w-nA- are Ef ysheAn7fAallCharyf 7y-ns wf rd f rVer t uy7f rDeV haryf 7y-e Qi hrf Aess If y
i BN 3uDt er = i BN regnsyrCEuDt er 7ff D Vayat ase DarEyarEeV t Ci -eDnAal Bt syraAys NernnAes. T-e i -eDnAal Bt syraAys NernnAe ns a Vnnsnf i E f 7y-e BDennAaE i -eDnAal Nf AneyC.
bUI = bnDnyf 7rehf nyEg
I PM = I elayrne PerAeEyage Mn7ereEAe
= GEVnAayes 7arneV Qi

Laboratory Duplicate (DUP) Report

T-e qualnyC Af Eyf I yerD bat f rayf rC MuhlnAaye re7ers yf a raEVf DIC seleAyeV nEyralat f rayf rC shlny bat f rayf rC VuhlnAayes hrf nnVe nE7frDayfiE regarVfEg Dey-f V hreArsnf E aEV saDhle -eyerf geEenyC. T-e herDnyyeV raEges 7f r y-e I elayrne PerAeEy Memnayf iE (I PM) f 7 bat f rayf rC MuhlnAayes are sheAn7feV nE BbN c ey-f V QR Gv 3/49 aEV are VeheEVeEy f E y-e DagEnyuVe f 7 resulys nE Af Dharnsf E yf y-e lemel f 7 rehf nyEg: I esuly < o0 yDes bUI : 3f bnDny, I esulyt eyweeE o0 aEV 10 yDes bUI : 0% - 50%; I esuly> 10 yDes bUI : 0% - 10%.

Nut -c aynx: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4343369)									
v c 110949o-0p0	0pp5_NM414_11050p	v B055: c f nsyure i f EyeEy	----	0.o	%	p4.9	p5.1	4.1	0% - 10%
v c 1109494-011	BEf ECDf us	v B055: c f nsyure i f EyeEy	----	0.o	%	4p.9	4p.5	o.0	0% - 10%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: Per7uf rf t uyaEe sul7f EnAaAnV (PFWN)	4O5-O4-5	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf heEyaEe sul7f EnAaAnV (PFPeN)	1O08-Lo-p	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEe sul7f EnAaAnV (PFHxN)	455-p8-p	0.0001	Dg/dg	0.0008	0.0005	44.1	3f bnDny
		v P14oX: Per7uf rf - ehyaEe sul7f EnAaAnV (PFHhN)	4O5-L1-9	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf f AyaEe sul7f EnAaAnV (PFUN)	oO84-14-o	0.0001	Dg/dg	0.0o8O	0.0oOp	p.1	0% - 10%
		v P14oX: Per7uf rf VeAaEe sul7f EnAaAnV (PFMN)	445-OO-4	0.0001	Dg/dg	0.000p	0.000p	0.0	3f bnDny
v c 1109984-01o	BEf ECDf us	v P14oX: Per7uf rf t uyaEe sul7f EnAaAnV (PFWN)	4O5-O4-5	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf heEyaEe sul7f EnAaAnV (PFPeN)	1O08-Lo-p	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEe sul7f EnAaAnV (PFHxN)	455-p8-p	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - ehyaEe sul7f EnAaAnV (PFHhN)	4O5-L1-9	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf f AyaEe sul7f EnAaAnV (PFUN)	oO84-14-o	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf VeAaEe sul7f EnAaAnV (PFMN)	445-OO-4	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: Per7uf rf heEyaEf nAaAnV (PFPeB)	1O08-L0-4	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEf nAaAnV (PFHxB)	40O-1p-p	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - ehyaEf nAaAnV (PFHhB)	4O5-95-L	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf f AyaEf nAaAnV (PFUB)	445-8O-o	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf Ef EaEf nAaAnV (PF3B)	4O5-L5-o	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf VeAaEf nAaAnV (PFMB)	445-O8-1	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf uEVeAaEf nAaAnV (PFKEMB)	1059-Lp-9	0.0001	Dg/dg	0.0004	0.0004	0.0	3f bnDny
		v P14oX: Per7uf rf Vf VeAaEf nAaAnV (PFMf MB)	40O-55-o	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny

Nut -c aynx: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4341555) - continued									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: Per7uf rf ynVeAaEf nAaAnV (PFTrMB)	O181L-Lp-9	0.0001	D g/dg	0.000p	0.0008	1L.8	3 f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nAaAnV (PFTeMB)	4O8-08-O	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: Per7uf rf t uyaEf nAaAnV (PFWB)	4O5-11-p	0.00o	D g/dg	<0.00o	<0.00o	0.0	3 f bnDny
v c 1109984-01o	BEf ECDf us	v P14oX: Per7uf rf heEyaEf nAaAnV (PFPeB)	1O08-L0-4	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf - exaEf nAaAnV (PFHxB)	40O-1p-p	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf - ehyaEf nAaAnV (PFHhB)	4O5-95-L	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf f AyaEf nAaAnV (PFUB)	445-8O-o	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf Ef EaEf nAaAnV (PF3 B)	4O5-L5-o	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf VeAaEf nAaAnV (PFMB)	445-O8-1	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf uEVeAaEf nAaAnV (PFKEMB)	1059-Lp-9	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf Vf VeAaEf nAaAnV (PFMf MB)	40O-55-o	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf ynVeAaEf nAaAnV (PFTrMB)	O181L-Lp-9	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nAaAnV (PFTeMB)	4O8-08-O	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: Per7uf rf t uyaEf nAaAnV (PFWB)	4O5-11-p	0.00o	D g/dg	<0.00o	<0.00o	0.0	3 f bnDny
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf aAeynAaAnV (c eFUNBB)	1455-4o-L	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf aAeynAaAnV (v yFUNBB)	1LLo-50-8	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
v c 1109984-01o	BEf ECDf us	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf aAeynAaAnV (c eFUNBB)	1455-4o-L	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf aAeynAaAnV (v yFUNBB)	1LLo-50-8	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny

Nut -c aynx: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: p:1 Fluf rf yelf D er sulf7f EnA aAnV (p:1 FTN)	C5Co1p-O1-p	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: 8:1 Fluf rf yelf D er sulf7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: 9:1 Fluf rf yelf D er sulf7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: o0:1 Fluf rf yelf D er sulf7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
v c 1109984-01o	BEf ECD f us	v P14oX: p:1 Fluf rf yelf D er sulf7f EnA aAnV (p:1 FTN)	C5Co1p-O1-p	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: 8:1 Fluf rf yelf D er sulf7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: 9:1 Fluf rf yelf D er sulf7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: o0:1 Fluf rf yelf D er sulf7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
EP231P: PFAS Sums (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: NuD f 7PFBN	----	0.0001	D g/dg	0.0o9p	0.0oL1	p.4	0% - 10%
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0001	D g/dg	0.0oO4	0.0oCL	4.p	0% - 10%
		v P14oX: NuD f 7PFBN (R B MvI bnsy)	----	0.0001	D g/dg	0.0oO4	0.0oCL	4.p	0% - 10%
v c 1109984-01o	BEf ECD f us	v P14oX: NuD f 7PFBN	----	0.0001	D g/dg	<0.0001	<0.0001	0.0	3f bnD ry
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0001	D g/dg	<0.0001	<0.0001	0.0	3f bnD ry
		v P14oX: NuD f 7PFBN (R B MvI bnsy)	----	0.0001	D g/dg	<0.0001	<0.0001	0.0	3f bnD ry

Nut -c aynx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: Per7uf rf - exaEe sulf7f EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	o.p1	o.p5	1.0	0% - 10%
		v P14oX: Per7uf rf f AyaEe sulf7f EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	1.oO	1.oL	0.L	0% - 10%
		v P14oX: Per7uf rf t uyaEe sulf7f EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	0.10	0.oL	0.0	3f bnD ry
		v P14oX: Per7uf rf heEyaEe sulf7f EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	0.10	0.1o	0.0	0% - 50%
		v P14oX: Per7uf rf - ehyaEe sulf7f EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	0.oo	0.o1	0.0	3f bnD ry
		v P14oX: Per7uf rf VeAaEe sulf7f EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnD ry
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf - exaEe sulf7f EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	0.10	0.o9	9.4	0% - 50%
		v P14oX: Per7uf rf f AyaEe sulf7f EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	0.85	0.59	oo.p	0% - 10%
		v P14oX: Per7uf rf t uyaEe sulf7f EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	0.04	0.0p	0.0	3f bnD ry
		v P14oX: Per7uf rf heEyaEe sulf7f EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnD ry

Nut -c ayrnx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4340647) - continued									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: Per7uf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	0.01	0.01	0.0	3f bnDry
		v P14oX: Per7uf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.0o	µg/b	0.08	0.05	0.0	3f bnDry
		v P14oX: Per7uf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: Per7uf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDry
		v P14oX: Per7uf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDry
		v P14oX: Per7uf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	0.o0	0.o0	0.0	3f bnDry
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	0.09	0.0L	0.0	3f bnDry
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	0.1p	0.15	0.0	0% - 50%
		v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	0.08	0.05	0.0	3f bnDry
		v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	<0.o	0.0	3f bnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	0.01	0.01	0.0	3f bnDry
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	0.04	0.04	0.0	3f bnDry
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	0.0p	0.0p	0.0	3f bnDry
		v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry

Nut -c aynx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340647) - continued									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
		v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	<0.o	0.0	3f bnDny
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
		v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	<0.o	0.0	3f bnDny
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
		v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	<0.o	0.0	3f bnDny
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: Per7uf rf f AyaEe sul7f EaDnVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4339776) - continued									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf f AyaEe sul7f EaD nVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: Per7uf rf f AyaEe sul7f EaD nVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: Per7uf rf f AyaEe sul7f EaD nVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340663) - continued									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	O5Oo1p-O1-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1O8oL-LO-1	0.05	µg/b	<0.05	0.05	0.0	3f bnDry
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	O5Oo1p-O1-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1O8oL-LO-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	O5Oo1p-O1-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1O8oL-LO-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	O5Oo1p-O1-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1O8oL-LO-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340663) - continued									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
EP231P: PFAS Sums (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: NuD f 7PFBN	----	0.0o	µg/b	p.59	p.C0	1.8	0% - 10%
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0o	µg/b	4.5L	4.8p	o.p	0% - 10%
		v P14oX: NuD f 7PFBN (R B Mv l brsy)	----	0.0o	µg/b	p.1O	p.4O	1.4	0% - 10%
EP231P: PFAS Sums (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: NuD f 7PFBN	----	0.0o	µg/b	0.LO	0.9L	9.8	0% - 10%
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0o	µg/b	0.95	0.C8	oo.1	0% - 10%
		v P14oX: NuD f 7PFBN (R B Mv l brsy)	----	0.0o	µg/b	0.LO	0.9L	9.8	0% - 10%
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: NuD f 7PFBN	----	0.0o	µg/b	0.09	0.0O	o4.4	3f bnDny
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0o	µg/b	0.09	0.0O	o4.4	3f bnDny
		v P14oX: NuD f 7PFBN (R B Mv l brsy)	----	0.0o	µg/b	0.09	0.0O	o4.4	3f bnDny
EP231P: PFAS Sums (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: NuD f 7PFBN	----	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny
		v P14oX: NuD f 7PFBN (R B Mv l brsy)	----	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny

Method Blank (MB) and Laboratory Control Sample (LCS) Report

T-e qualnyC AfEyrf l yerD c ey-f V / bat f rayf rC WaEd re7ers yf aE aEalOye 7ree Daynx yf w-nA- all reageEys are aVVeV nE y-e saDe nf luDes f r hrf hf nyf lEs as useV nE syaEVarV saDhle hreharayf lE. T-e hurhf se f 7 y-ns Qi haraDeyer ns yf Df Enyf r hf yeEyral lat f rayf rC AfEyaDnEayf lE. T-e qualnyC AfEyrf l yerD bat f rayf rC i f Eyrf l NaDhle (bi N) re7ers yf a Aerym7eV re7ereEAe Dayernal, f r a dEf wE nEyer7ereEAe 7ree Daynx shndeV wny- yargey aEalOyes. T-e hurhf se f 7y-ns Qi haraDeyer ns yf Df Enyf r Dey-f V hreAnsnf lE aEV aAAuraACnEVeheEVeEyf 7saDhle Daynx. MCEaDnA l eAf nerCbnDns are t aseV f E syaynsynAal enaluaynf lE f 7hrf AesseV bi N.

Nut -c aynx: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4341555)								
v P14oX: Per7uf rf t uyaEe sul7f EnAaAnV (PFWN)	4C5-O4-5	0.0001	Dg/dg	<0.0001	0.00ooo Dg/dg	o04	O1.0	o19
v P14oX: Per7uf rf heEyaEe sul7f EnAaAnV (PFPeN)	1C08-Lo-p	0.0001	Dg/dg	<0.0001	0.00oo9 Dg/dg	oo1	O4.0	o14
v P14oX: Per7uf rf - exaEe sul7f EnAaAnV (PFHxN)	455-p8-p	0.0001	Dg/dg	<0.0001	0.00op Dg/dg	CL.8	8O.0	o40
v P14oX: Per7uf rf - ehyaEe sul7f EnAaAnV (PFHhN)	4C5-L1-9	0.0001	Dg/dg	<0.0001	0.00ooL Dg/dg	o14	C0.0	o41
v P14oX: Per7uf rf f AyaEe sul7f EnAaAnV (PFUN)	oC84-14-o	0.0001	Dg/dg	<0.0001	0.00oo8 Dg/dg	o08	89.0	o48
v P14oX: Per7uf rf VeAaEe sul7f EnAaAnV (PFMN)	445-CO-4	0.0001	Dg/dg	<0.0001	0.00o1o Dg/dg	Lp.1	5L.0	o4p
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341555)								
v P14oX: Per7uf rf t uyaEf nAaAnV (PFWB)	4C5-11-p	0.00o	Dg/dg	<0.00o	0.00815 Dg/dg	Lo.p	Co.0	o45
v P14oX: Per7uf rf heEyaEf nAaAnV (PFPeB)	1C08-L0-4	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	9o.8	8L.0	o41
v P14oX: Per7uf rf - exaEf nAaAnV (PFHxB)	40O-1p-p	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o01	C0.0	o41
v P14oX: Per7uf rf - ehyaEf nAaAnV (PFHhB)	4C5-95-L	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	L8.5	Co.0	o4o
v P14oX: Per7uf rf f AyaEf nAaAnV (PFUB)	445-8O-o	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o00	8L.0	o44
v P14oX: Per7uf rf Ef EaEf nAaAnV (PF3B)	4C5-L5-o	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	L4.1	O1.0	o1L
v P14oX: Per7uf rf VeAaEf nAaAnV (PFMB)	445-C8-1	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o05	8L.0	o44
v P14oX: Per7uf rf uEVeAaEf nAaAnV (PFKEMB)	1059-Lp-9	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	oo4	8p.0	o48
v P14oX: Per7uf rf Vf VeAaEf nAaAnV (PFMfMB)	40O-55-o	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o09	8L.0	o45
v P14oX: Per7uf rf ynVeAaEf nAaAnV (PFTrMB)	O181L-Lp-9	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	C9.8	88.0	o4L
v P14oX: Per7uf rf yeyraVeAaEf nAaAnV (PFTeMB)	4C8-08-O	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	L9.L	8L.0	o44
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4341555)								
v P14oX: Per7uf rf f AyaEe sul7f EaDnVe (FUNB)	C5p-Lo-8	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o01	8O.0	o4O
v P14oX: 3-c ey-Cl her7uf rf f AyaEe sul7f EaDnVe (c eFUNB)	4o508-41-9	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	oo0	C0.0	o40
v P14oX: 3-v y-Cl her7uf rf f AyaEe sul7f EaDnVe (v yFUNB)	po5o-50-1	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	L5.o	C0.0	o40
v P14oX: 3-c ey-Cl her7uf rf f AyaEe sul7f EaDnVf ey-aEf l (c eFUNv)	1ppp9-0L-O	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	o0p	C0.0	o40
v P14oX: 3-v y-Cl her7uf rf f AyaEe sul7f EaDnVf ey-aEf l (v yFUNv)	o8Lo-LL-1	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	LL.4	C0.0	o40
v P14oX: 3-c ey-Cl her7uf rf f AyaEe sul7f EaDnVf aAeynAaAnV (c eFUNBB)	1455-4o-L	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	oo8	84.0	opp
v P14oX: 3-v y-Cl her7uf rf f AyaEe sul7f EaDnVf aAeynAaAnV (v yFUNBB)	1LLo-50-8	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	Lp.o	8o.0	o4L
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341555)								
v P14oX: p:1 Fluf rf yelf Der sul7f EnAaAnV (p:1 FTN)	O5Oo1p-O1-p	0.0005	Dg/dg	<0.0005	0.00ooODg/dg	o04	81.0	op5
v P14oX: 8:1 Fluf rf yelf Der sul7f EnAaAnV (8:1 FTN)	1C8oL-LO-1	0.0005	Dg/dg	<0.0005	0.00ooL Dg/dg	o0O	8p.0	op0
v P14oX: 9:1 Fluf rf yelf Der sul7f EnAaAnV (9:1 FTN)	4Lo09-4p-p	0.0005	Dg/dg	<0.0005	0.00o1 Dg/dg	oo0	85.0	o4O

Nut -c aynx: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341555) - continued								
v P14oX: o0:1 Fluf rf yelf D er sulf7 EnA aAnV (o0:1 FTN)	o10118-80-0	0.0005	D g/dg	<0.0005	0.00o1o D g/dg	95.L	C0.0	o40
EP231P: PFAS Sums (QCLot: 4341555)								
v P14oX: NuD f 7PFBN	---	0.0001	D g/dg	<0.0001	----	----	----	----
v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0001	D g/dg	<0.0001	----	----	----	----
v P14oX: NuD f 7PFBN (R B MvI brsy)	---	0.0001	D g/dg	<0.0001	----	----	----	----

Nut -c aynx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4339776)								
v P14oX: Per7luf rf t uyaEe sulf7 EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	<0.01	0.111 µg/b	9Co	C1.0	o40
v P14oX: Per7luf rf heEyaEe sulf7 EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	0.145 µg/b	Lo.9	Cb.0	o1O
v P14oX: Per7luf rf - exaEe sulf7 EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	0.119 µg/b	94.O	89.0	o4o
v P14oX: Per7luf rf - ehyaEe sulf7 EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	<0.01	0.15 µg/b	94.o	8L.0	o4p
v P14oX: Per7luf rf f AyaEe sulf7 EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	<0.0o	0.141 µg/b	C9.1	85.0	op0
v P14oX: Per7luf rf VeAaEe sulf7 EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	0.1po µg/b	9o.0	54.0	op1
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340647)								
v P14oX: Per7luf rf t uyaEe sulf7 EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	<0.01	0.111 µg/b	o00	C1.0	o40
v P14oX: Per7luf rf heEyaEe sulf7 EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	0.145 µg/b	oop	Cb.0	o1O
v P14oX: Per7luf rf - exaEe sulf7 EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	0.119 µg/b	o04	89.0	o4o
v P14oX: Per7luf rf - ehyaEe sulf7 EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	<0.01	0.15 µg/b	o08	8L.0	o4p
v P14oX: Per7luf rf f AyaEe sulf7 EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	<0.0o	0.141 µg/b	LL.4	85.0	op0
v P14oX: Per7luf rf VeAaEe sulf7 EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	0.1po µg/b	LQL	54.0	op1
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340663)								
v P14oX: Per7luf rf t uyaEe sulf7 EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	<0.01	0.111 µg/b	L4.L	C1.0	o40
v P14oX: Per7luf rf heEyaEe sulf7 EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	0.145 µg/b	o01	Cb.0	o1O
v P14oX: Per7luf rf - exaEe sulf7 EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	0.119 µg/b	o04	89.0	o4o
v P14oX: Per7luf rf - ehyaEe sulf7 EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	<0.01	0.15 µg/b	Lp.0	8L.0	o4p
v P14oX: Per7luf rf f AyaEe sulf7 EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	<0.0o	0.141 µg/b	L4.1	85.0	op0
v P14oX: Per7luf rf VeAaEe sulf7 EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	0.1po µg/b	L5.8	54.0	op1
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4341163)								
v P14oX-C3k: Per7luf rf t uyaEe sulf7 EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	<0.01	0.ppp µg/b	o00	C1.0	o40
v P14oX-C3k: Per7luf rf heEyaEe sulf7 EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	0.pOµg/b	oop	Cb.0	o1O
v P14oX-C3k: Per7luf rf - exaEe sulf7 EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	0.p5Oµg/b	o04	89.0	o4o
v P14oX-C3k: Per7luf rf - ehyaEe sulf7 EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	<0.01	0.pCOµg/b	ooo	8L.0	o4p
v P14oX-C3k: Per7luf rf f AyaEe sulf7 EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	<0.0o	0.p85 µg/b	LL.o	85.0	op0
v P14oX-C3k: Per7luf rf VeAaEe sulf7 EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	0.p91 µg/b	LQL	54.0	op1
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4339776)								

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4339776) - continued								
v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	o.15 µg/b	L4.0	O4.0	o1L
v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	0.15 µg/b	LL.5	O1.0	o1L
v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	0.15 µg/b	Op.O	O1.0	o1L
v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	0.15 µg/b	L1.o	O1.0	o40
v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	0.15 µg/b	99.1	Ob.0	o44
v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	0.15 µg/b	LL.O	8L.0	o40
v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	0.15 µg/b	O4.5	Ob.0	o1L
v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	99.1	8L.0	o44
v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	0.15 µg/b	9p.0	O1.0	o4p
v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	O9.o	85.0	opp
v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	0.815 µg/b	Lo.o	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340647)								
v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	o.15 µg/b	L1.L	O4.0	o1L
v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	0.15 µg/b	oo1	O1.0	o1L
v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	0.15 µg/b	99.5	O1.0	o1L
v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	0.15 µg/b	oo0	O1.0	o40
v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	0.15 µg/b	o0o	Ob.0	o44
v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	0.15 µg/b	ooo	8L.0	o40
v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	0.15 µg/b	98.0	Ob.0	o1L
v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	LL.9	8L.0	o44
v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	0.15 µg/b	L8.L	O1.0	o4p
v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	98.5	85.0	opp
v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	0.815 µg/b	o08	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340663)								
v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	o.15 µg/b	Lp.8	O4.0	o1L
v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	0.15 µg/b	o0O	O1.0	o1L
v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	0.15 µg/b	9L.1	O1.0	o1L
v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	0.15 µg/b	o08	O1.0	o40
v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	0.15 µg/b	o05	Ob.0	o44
v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	0.15 µg/b	o09	8L.0	o40
v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	0.15 µg/b	L0.L	Ob.0	o1L
v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	o01	8L.0	o44
v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	0.15 µg/b	o0p	O1.0	o4p
v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	Lp.9	85.0	opp
v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	0.815 µg/b	o05	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341163)								
v P14oX-C3 k: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o0	1.5 µg/b	L1.L	O4.0	o1L
v P14oX-C3 k: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	0.5 µg/b	oo1	O1.0	o1L

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341163) - continued								
v P14oX-G k: Per7luf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	0.5 µg/b	99.5	O1.0	o1L
v P14oX-G k: Per7luf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	0.5 µg/b	oo0	O1.0	o40
v P14oX-G k: Per7luf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	0.5 µg/b	o0o	Ob.0	o44
v P14oX-G k: Per7luf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	0.5 µg/b	ooo	8L.0	o40
v P14oX-G k: Per7luf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	0.5 µg/b	98.0	Ob.0	o1L
v P14oX-G k: Per7luf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	0.5 µg/b	LL.9	8L.0	o44
v P14oX-G k: Per7luf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	0.5 µg/b	L8.L	O1.0	o4p
v P14oX-G k: Per7luf rf ynVeAaEf nA aAnV (PFTnMB)	O181L-Lp-9	0.01	µg/b	<0.01	0.5 µg/b	98.5	85.0	opp
v P14oX-G k: Per7luf rf yeyaVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	o.15 µg/b	o08	Ob.0	o41
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4339776)								
v P14oX: Per7luf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	0.15 µg/b	9L.L	8O.0	o4O
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	0.815 µg/b	94.o	89.0	opo
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	0.815 µg/b	Lp.0	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	0.815 µg/b	L5.0	O0.0	o40
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	0.815 µg/b	9O.O	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	0.15 µg/b	o01	85.0	o48
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	0.15 µg/b	Lo.p	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340647)								
v P14oX: Per7luf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	0.15 µg/b	o0p	8O.0	o4O
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	0.815 µg/b	L4.9	89.0	opo
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	0.815 µg/b	Lp.9	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	0.815 µg/b	o0O	O0.0	o40
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	0.815 µg/b	LL.O	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	0.15 µg/b	ooO	85.0	o48
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	0.15 µg/b	o0p	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663)								
v P14oX: Per7luf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	0.15 µg/b	L9.L	8O.0	o4O
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	0.815 µg/b	9L.0	89.0	opo
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	0.815 µg/b	oo1	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	0.815 µg/b	L1.L	O0.0	o40

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663) - continued								
v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	0.815 µg/b	L4.p	C0.0	o40
v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDrVf aAeyrA aArV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	0.15 µg/b	o0O	85.0	o48
v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVf aAeyrA aArV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	0.15 µg/b	o09	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4341163)								
v P14oX-G3 k: Per7uf rf f AyaEe sul7f EaDrVe (FUNB)	C5p-Lo-8	0.01	µg/b	<0.01	0.5 µg/b	o0p	8C0	o4O
v P14oX-G3 k: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDrVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	o.15 µg/b	L4.9	89.0	opo
v P14oX-G3 k: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	o.15 µg/b	Lp.9	C0.0	o40
v P14oX-G3 k: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDrVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	o.15 µg/b	o0O	C0.0	o40
v P14oX-G3 k: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	o.15 µg/b	LL.O	C0.0	o40
v P14oX-G3 k: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDrVf aAeyrA aArV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	0.5 µg/b	ooO	85.0	o48
v P14oX-G3 k: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVf aAeyrA aArV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	0.5 µg/b	o0p	8o.0	o45
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4339776)								
v P14oX: p:1 Fluf rf yelf Der sul7f ErAaArV (p:1 FTN)	C5Co1p-O1-p	0.05	µg/b	<0.05	0.14p µg/b	98.4	84.0	op4
v P14oX: 8:1 Fluf rf yelf Der sul7f ErAaArV (8:1 FTN)	1C8oL-LO-1	0.05	µg/b	<0.05	0.149 µg/b	99.L	8p.0	op0
v P14oX: 9:1 Fluf rf yelf Der sul7f ErAaArV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	0.1p µg/b	L4.O	8C0	o49
v P14oX: o0:1 Fluf rf yelf Der sul7f ErAaArV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	0.1p1 µg/b	O1.9	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340647)								
v P14oX: p:1 Fluf rf yelf Der sul7f ErAaArV (p:1 FTN)	C5Co1p-O1-p	0.05	µg/b	<0.05	0.14p µg/b	o05	84.0	op4
v P14oX: 8:1 Fluf rf yelf Der sul7f ErAaArV (8:1 FTN)	1C8oL-LO-1	0.05	µg/b	<0.05	0.149 µg/b	o08	8p.0	op0
v P14oX: 9:1 Fluf rf yelf Der sul7f ErAaArV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	0.1p µg/b	o09	8C0	o49
v P14oX: o0:1 Fluf rf yelf Der sul7f ErAaArV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	0.1p1 µg/b	O9.O	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340663)								
v P14oX: p:1 Fluf rf yelf Der sul7f ErAaArV (p:1 FTN)	C5Co1p-O1-p	0.05	µg/b	<0.05	0.14p µg/b	ooo	84.0	op4
v P14oX: 8:1 Fluf rf yelf Der sul7f ErAaArV (8:1 FTN)	1C8oL-LO-1	0.05	µg/b	<0.05	0.149 µg/b	o09	8p.0	op0
v P14oX: 9:1 Fluf rf yelf Der sul7f ErAaArV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	0.1p µg/b	oo5	8C0	o49
v P14oX: o0:1 Fluf rf yelf Der sul7f ErAaArV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	0.1p1 µg/b	L4.L	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341163)								
v P14oX-G3 k: p:1 Fluf rf yelf Der sul7f ErAaArV (p:1 FTN)	C5Co1p-O1-p	0.05	µg/b	<0.05	0.p8L µg/b	o05	84.0	op4
v P14oX-G3 k: 8:1 Fluf rf yelf Der sul7f ErAaArV (8:1 FTN)	1C8oL-LO-1	0.05	µg/b	<0.05	0.pC8 µg/b	o08	8p.0	op0
v P14oX-G3 k: 9:1 Fluf rf yelf Der sul7f ErAaArV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	0.p9 µg/b	o09	8C0	o49
v P14oX-G3 k: o0:1 Fluf rf yelf Der sul7f ErAaArV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	0.p94 µg/b	O9.L	C0.0	o40

Nut -c aynx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 4339776)								
v P14oX: NuD f 7PFBN	---	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFBN (R B MvI brsy)	---	0.0o	µg/b	<0.0o	----	----	----	----
EP231P: PFAS Sums (QCLot: 4340647)								
v P14oX: NuD f 7PFBN	---	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFBN (R B MvI brsy)	---	0.0o	µg/b	<0.0o	----	----	----	----
EP231P: PFAS Sums (QCLot: 4340663)								
v P14oX: NuD f 7PFBN	---	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFBN (R B MvI brsy)	---	0.0o	µg/b	<0.0o	----	----	----	----
EP231P: PFAS Sums (QCLot: 4341163)								
v P14oX-G3k: NuD f 7PFBN	---	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX-G3k: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX-G3k: NuD f 7PFBN (R B MvI brsy)	---	0.0o	µg/b	<0.0o	----	----	----	----

Matrix Spike (MS) Report

T- e qualnyC Af Eyrf l yerD c aynx Nhrde (c N) re7ers yf aE nEyralat f rayf rC shlny saDhle shrdeV wny- a rehreseEyaynne sey f 7 yargey aEalOyes. T- e hurhf se f 7 y-ns Qi haraDeyer ns yf DfEnyf r hfyeEyral Daynx e7eAys f E aEalOye reAf nerres. NyayA l eAf nerCbnDns as her lat f rayf rCMaya QualnyCUt jeAynes (MQUs). GYeal reAf nerCraEges syayeV DaCt e wanneV nEy- e enreEyf 7saDhle Daynx nEyer7ereEAe.

Nut -c aynx: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4341555)							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: Per7uf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.00ooo Dg/dg	Lo.8	O1.0	o19
		v P14oX: Per7uf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.00oo9 Dg/dg	o10	O4.0	o14
		v P14oX: Per7uf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.00oop Dg/dg	LOo	8O.0	o40
		v P14oX: Per7uf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.00ooL Dg/dg	o10	O0.0	o41
		v P14oX: Per7uf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.00oo8 Dg/dg	o0L	89.0	o48
		v P14oX: Per7uf rf VeAaEe sul7f EnA aAnV (PFMN)	445-OO-4	0.00o1o Dg/dg	Lp.8	5L.0	o4p
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341555)							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.00815 Dg/dg	9o.1	Oo.0	o45
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.00o15 Dg/dg	Op.0	8L.0	o41
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.00o15 Dg/dg	Lo.p	O0.0	o41

Nut -c ayrnx: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341555) - continued							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: Per7uf rf - ehyaEf rnAaAnV (PFHhB)	4O5-95-L	0.00o15 Dg/dg	9L.0	Oo.0	o4o
		v P14oX: Per7uf rf f AyaEf rnAaAnV (PFUB)	445-8O-o	0.00o15 Dg/dg	L0.1	8L.0	o44
		v P14oX: Per7uf rf Ef EaEf rnAaAnV (PF3B)	4O5-L5-o	0.00o15 Dg/dg	98.p	O1.0	o1L
		v P14oX: Per7uf rf VeAaEf rnAaAnV (PFMB)	445-O8-1	0.00o15 Dg/dg	L1.0	8L.0	o44
		v P14oX: Per7uf rf uEVeAaEf rnAaAnV (PFKEMB)	1059-Lp-9	0.00o15 Dg/dg	L8.0	8p.0	o48
		v P14oX: Per7uf rf Vf VeAaEf rnAaAnV (PFMfMB)	40O-55-o	0.00o15 Dg/dg	9Oo	8L.0	o45
		v P14oX: Per7uf rf ynVeAaEf rnAaAnV (PFTrMB)	O181L-Lp-9	0.00o15 Dg/dg	94.p	88.0	o4L
		v P14oX: Per7uf rf yeyraVeAaEf rnAaAnV (PFTeMB)	4O8-08-O	0.004o1 Dg/dg	94.4	8L.0	o44
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4341555)							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: Per7uf rf f AyaEe sul7fEaDnVe (FUNB)	O5p-Lo-8	0.00o15 Dg/dg	Lp.O	8O.0	o4O
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7fEaDnVe (c eFUNB)	4o508-41-9	0.004o1 Dg/dg	OO.0	O0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7fEaDnVe (v yFUNB)	po5o-50-1	0.004o1 Dg/dg	91.1	O0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7fEaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.004o1 Dg/dg	L4.9	O0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7fEaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.004o1 Dg/dg	9O.5	O0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7fEaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.00o15 Dg/dg	Lp.5	84.0	opp
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7fEaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.00o15 Dg/dg	O9.9	8o.0	o4L
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341555)							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: p:1 Fluf rf yelf Der sul7fEnAaAnV (p:1 FTN)	O5Oo1p-O1-p	0.00ooODg/dg	Lo.1	81.0	op5
		v P14oX: 8:1 Fluf rf yelf Der sul7fEnAaAnV (8:1 FTN)	1O8oL-LO-1	0.00ooL Dg/dg	o05	8p.0	op0
		v P14oX: 9:1 Fluf rf yelf Der sul7fEnAaAnV (9:1 FTN)	4Lo09-4p-p	0.00o1 Dg/dg	o00	85.0	o4O
		v P14oX: o0:1 Fluf rf yelf Der sul7fEnAaAnV (o0:1 FTN)	o10118-80-0	0.00o1o Dg/dg	91.1	O0.0	o40

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4339776)							
v c 110949o-0oo	0pp5_c R 0p8G110504	v P14oX: Per7uf rf t uyaEe sul7fEnAaAnV (PFWN)	4O5-O4-5	0.111 µg/b	Lp.p	O1.0	o40
		v P14oX: Per7uf rf heEyaEe sul7fEnAaAnV (PFPeN)	1O08-Lo-p	0.145 µg/b	LL.O	Oo.0	o1O
		v P14oX: Per7uf rf - exaEe sul7fEnAaAnV (PFHxN)	455-p8-p	0.119 µg/b	# 3 f y MeyerDnEeV	89.0	o4o
		v P14oX: Per7uf rf - ehyaEe sul7fEnAaAnV (PFHhN)	4O5-L1-9	0.149 µg/b	L8.L	8L.0	o4p
		v P14oX: Per7uf rf f AyaEe sul7fEnAaAnV (PFUN)	oO84-14-o	0.141 µg/b	# 3 f y MeyerDnEeV	85.0	op0
		v P14oX: Per7uf rf VeAaEe sul7fEnAaAnV (PFMN)	445-OO-4	0.1po µg/b	99.O	54.0	op1

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340647)							
v c 110949o-04p	0pp5_NR 455_11050p rEyerEal lat qA	v P14oX: Per7luf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.111 µg/b	oo8	O1.0	o40
		v P14oX: Per7luf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.145 µg/b	oo4	Ob.0	o1O
		v P14oX: Per7luf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.119 µg/b	oo1	89.0	o4o
		v P14oX: Per7luf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.149 µg/b	o0O	8L.0	o4p
		v P14oX: Per7luf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.141 µg/b	o4O	85.0	op0
		v P14oX: Per7luf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.1po µg/b	99.O	54.0	op1
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340663)							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: Per7luf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.111 µg/b	ooL	O1.0	o40
		v P14oX: Per7luf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.145 µg/b	o09	Ob.0	o1O
		v P14oX: Per7luf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.119 µg/b	o18	89.0	o4o
		v P14oX: Per7luf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.149 µg/b	o0o	8L.0	o4p
		v P14oX: Per7luf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.141 µg/b	LL.p	85.0	op0
		v P14oX: Per7luf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.1po µg/b	Lo.p	54.0	op1
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4339776)							
v c 110949o-0oo	0pp5_c R 0p8G110504	v P14oX: Per7luf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	o.15 µg/b	OL.o	O4.0	o1L
		v P14oX: Per7luf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.15 µg/b	LL.O	O1.0	o1L
		v P14oX: Per7luf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.15 µg/b	O1.1	O1.0	o1L
		v P14oX: Per7luf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.15 µg/b	L1.8	O1.0	o40
		v P14oX: Per7luf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.15 µg/b	L1.8	Ob.0	o44
		v P14oX: Per7luf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.15 µg/b	L8.o	8L.0	o40
		v P14oX: Per7luf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.15 µg/b	Ob.L	Ob.0	o1L
		v P14oX: Per7luf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.15 µg/b	95.L	8L.0	o44
		v P14oX: Per7luf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.15 µg/b	99.9	O1.0	o4p
		v P14oX: Per7luf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.15 µg/b	OO.4	85.0	opp
		v P14oX: Per7luf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.815 µg/b	Lo.1	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340647)							
v c 110949o-04p	0pp5_NR 455_11050p rEyerEal lat qA	v P14oX: Per7luf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	o.15 µg/b	Lo.1	O4.0	o1L
		v P14oX: Per7luf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.15 µg/b	oo4	O1.0	o1L
		v P14oX: Per7luf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.15 µg/b	Lp.p	O1.0	o1L
		v P14oX: Per7luf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.15 µg/b	ooo	O1.0	o40
		v P14oX: Per7luf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.15 µg/b	o0p	Ob.0	o44
		v P14oX: Per7luf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.15 µg/b	oo4	8L.0	o40
		v P14oX: Per7luf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.15 µg/b	O8.0	Ob.0	o1L
		v P14oX: Per7luf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.15 µg/b	L8.1	8L.0	o44
		v P14oX: Per7luf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.15 µg/b	L0.o	O1.0	o4p
		v P14oX: Per7luf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.15 µg/b	OO.o	85.0	opp
		v P14oX: Per7luf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.815 µg/b	L5.8	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340663)							

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340663) - continued							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: Per7uf rf t uyaEf rA aAnV (PFWB)	4C5-11-p	o.15 µg/b	Cp.1	C4.0	o1L
		v P14oX: Per7uf rf heEyaEf rA aAnV (PFPeB)	1C08-L0-4	0.15 µg/b	oo5	C1.0	o1L
		v P14oX: Per7uf rf - exaEf rA aAnV (PFHxB)	40O-1p-p	0.15 µg/b	Lo.p	C1.0	o1L
		v P14oX: Per7uf rf - ehyaEf rA aAnV (PFHhB)	4C5-95-L	0.15 µg/b	o09	C1.0	o40
		v P14oX: Per7uf rf f AyaEf rA aAnV (PFUB)	445-8O-o	0.15 µg/b	o0O	Co.0	o44
		v P14oX: Per7uf rf Ef EaEf rA aAnV (PF3 B)	4C5-L5-o	0.15 µg/b	o0L	8L.0	o40
		v P14oX: Per7uf rf VeAaEf rA aAnV (PFMB)	445-C8-1	0.15 µg/b	95.0	Co.0	o1L
		v P14oX: Per7uf rf uEVeAaEf rA aAnV (PFKEMB)	1059-Lp-9	0.15 µg/b	L5.0	8L.0	o44
		v P14oX: Per7uf rf Vf VeAaEf rA aAnV (PFMf MB)	40O-55-o	0.15 µg/b	o0o	C1.0	o4p
		v P14oX: Per7uf rf ynVeAaEf rA aAnV (PFTrMB)	C181L-Lp-9	0.15 µg/b	98.4	85.0	opp
		v P14oX: Per7uf rf yeyraVeAaEf rA aAnV (PFTeMB)	4C8-08-O	0.815 µg/b	L9.1	Co.0	o41
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4339776)							
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	C5p-Lo-8	0.15 µg/b	L0.p	8C0	o4O
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.815 µg/b	89.5	89.0	opo
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.815 µg/b	C9.L	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.815 µg/b	98.L	C0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.815 µg/b	98.9	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.15 µg/b	o05	85.0	o48
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.15 µg/b	o0o	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340647)							
v c 110949o-04p	0pp5_NR 455_11050p nEyerEal lat qA	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	C5p-Lo-8	0.15 µg/b	L9.L	8C0	o4O
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.815 µg/b	C0.O	89.0	opo
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.815 µg/b	C1.1	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.815 µg/b	L1.8	C0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.815 µg/b	95.8	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.15 µg/b	o09	85.0	o48
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.15 µg/b	Lo.0	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663)							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	C5p-Lo-8	0.15 µg/b	L5.0	8C0	o4O

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663) - continued							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVe (c eFUNB)	4o508-41-9	0.815 µg/b	91.1	89.0	opo
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVe (v yFUNB)	po5o-50-1	0.815 µg/b	9L.1	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.815 µg/b	L8.5	C0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.815 µg/b	Lp.o	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.15 µg/b	o04	85.0	o48
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.15 µg/b	o00	8o.0	o45
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4339776)							
v c 110949o-0oo	0pp5_c R 0p8G110504	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	C5Cb1p-O1-p	0.14p µg/b	L4.p	84.0	op4
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.149 µg/b	L1.o	8p.0	op0
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.1p µg/b	L9.O	8O.0	o49
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.1p1 µg/b	Cb.9	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340647)							
v c 110949o-04p	0pp5_NR 455_11050p nEyerEal lat qA	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	C5Cb1p-O1-p	0.14p µg/b	o04	84.0	op4
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.149 µg/b	oo4	8p.0	op0
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.1p µg/b	oo8	8O.0	o49
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.1p1 µg/b	Cp.O	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340663)							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	C5Cb1p-O1-p	0.14p µg/b	oo1	84.0	op4
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.149 µg/b	oo4	8p.0	op0
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.1p µg/b	o08	8O.0	o49
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.1p1 µg/b	O1.p	C0.0	o40

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2208381**	Page	: 1 of 11
Amendment	: **1**		
y Qei b	: **DONT NOT USE - LOG UNDER MWHAUS**	4aLoratort	: ni Eroi v ei baQmlEDoi s eQouri e
[redacted]	[redacted]	Te@hhoi e	: [redacted]
Pro¥eMo	: I Ny _j 995_PFc AGs P	mabe Aav h@DHeMelEe2	: j 0Rs at Rdj dd
Alhe	: J ai 2lai a Gi JaDe	NDDue mabe	: j dR ui Rdj dd
Aav h@r	: [redacted]	Qo) of Dav h@DreMelEe2	: - W
Gr2er i uv Ler	: R	Qo) of Dav h@Dai aQDe2	: - j

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

J rlef v ethno2 Duv v arleDai 2 referei MeDare aQo hroEl2e2 bo aDDDbli braMeaLlQt)

Summary of Outliers

Outliers : Quality Control Samples

ThlDrehorbhlghQghbDoubQerDf@agge2 li the k uaQt y oi broQk y UHehorb)

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

s abrl% **WATER**

y ov houi 2 Srouh Qav e	4aLoratort Aav h@ Mn	y Qei bAav h@ Mn	Analyte	y c A Quv Ler	mata	4lv ltD	Comment
Matrix Spike (MS) Recoveries							
nPd31c: PerfQoroaQt CAuQoi lMcM2D	ns ddj 8381RRj 11	j 995_s O j 9- N ddj 5j 3	**Perfluorohexane sulfonic acid (PFHxS)**	355R9- R9	Qob meterv li e2	RRRR	**MS recovery not determined, background level greater than or equal to 4x spike level.**
nPd31c: PerfQoroaQt CAuQoi lMcM2D	ns ddj 8381RRj 11	j 995_s O j 9- N ddj 5j 3	**Perfluorooctane sulfonic acid (PFOS)**	1W 3Rd3R4	Qob meterv li e2	RRRR	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

s abrl% **WATER**

k uaQbt y oi broCAav h@ Tt he	y oui b		Habe &7 U		k uaQbt y oi broCAheMfiMatboi
s etho2	k y	Hegu@r	c NbuaC	n %eMbe2	
4aLoratort muh0MabeD&mx PU					
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFcAULt 4y s As A	9	5W	Wjj d	1j)j j	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFcAULt 4y s As A	j	1	j)j j	1j)j j	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s abrl%AhlYeD&s AU					
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFcAULt 4y s As A	j	1	j)j j	5)j j	QnPs dj 13 J 3 ; c4A k y Abai 2ar2

Analysis Holding Time Compliance

NtDav h@Dare l2ei bfle2 LeQq aDhaEli g Leei ai aCDe2 or e%braMbe2 oubD2e of reMbv v ei 2e2 hoQ2li g bv eDBbhlDDhouQ2 Le baYei li bo Mbi D2eratboi q hei li berhrebi g reDuGDD)

ThlD rehorb Duv v arlzeD e%braMboi w hreharatboi ai 2 ai aCDlD bv eD ai 2 Mbv hareD eaMh q lth c4A reMbv v ei 2e2 hoQ2li g bv eD &referei Mi g x AnPc AO 89- B c Pp c B c A ai 2 QnPs U LaDe2 oi bhe Dav h@ Mbi bali er hroE2e2) mabeDrehorbe2 rehreDei bflrDb2abe of e%braMboi or ai aCDlDai 2 hreMb2e DuLDe, uei b2lQbboi Dai 2 rerui D) c QDbi g of LreaMheD&f ai t UlDhroE2e2 hereli)

poQ2li g bv e for @aMhabe v etho2D &e)g) Ty 4PU Eart aMbor2li g bo bhe ai aCbeD rehorbe2) c DDeDDv ei b Mbv hareD bhe @aMh 2abe q lth bhe DhorbeDb ai aCbe hoQ2li g bv e for bhe e, ulEa@i b DblC v etho2) TheDe are: orgai lMC 19 2at DBv erMurt d8 2at D; obher v ebaCD 18j 2at D) c reMbr2e2 LreaMh 2oeDi obguarai bee a LreaMh for aCQ oi REoGbl@ harav eberD)

poQ2li g bv eD for ***VOC in soils*** Eart aMbor2li g bo ai aCbeD of li bereDb) I li t C y h@rl2e ai 2 Abirei e hoQ2li g bv e lD W2at D' otherD 19 2at D) c reMbr2e2 LreaMh 2oeD i ob guarai bee a LreaMh for aCC I Gy ai aCbeD ai 2 Dhouq2 Le Eerlfle2 li MaDe bhe rehorbe2 LreaMh lDa faCDe hoDbEe or I li t C y h@rl2e ai 2 Abirei e are i obYet ai aCbeDof li bereDbMbi Meri)

s abrl% **SOIL**

nEaQabboi : × = poQ2li g bv e LreaMh / ✓ = O lbhli hoQ2li g bv e)

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
j 995_Am38d_ddj 5j 3		**03-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	1WRs at Rdj dd	✓
HDPE Soil Jar (EA055)								
j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	18Rs at Rdj dd	✓
HDPE Soil Jar (EA055)								
j 995_Am3W5_ddj 5j -		**06-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	dj Rs at Rdj dd	✓
HDPE Soil Jar (EA055)								
j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	d1Rs at Rdj dd	✓

s abrl% **SOIL**

nEaQatboi : × = p oQ2li g tbv e LreaMh / ✓ = O lbhli ho Q2li g tbv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓

s abrl% **SOIL**

nEaQabtoi : × = p oQ2li g tbv e LreaMh / ✓ = O lbhli ho Q2li g tbv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓

s abrl% **WATER**

nEaQabtoi : × = p oQ2li g tbv e LreaMh / ✓ = O lbhli ho Q2li g tbv e)

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

s abrl% **WATER**

nEaQabloi : × = p oQ2li g blv e LreaMh / ✓ = O lbhli ho Q2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC QaL , MB							
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3W _ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

s abrl% **WATER**

nEaQabloi : × = poQ2li g blv e LreaMh / ✓ = O lbhli hoQ2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC QaL , MB							
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W_ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W_ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3Wj _ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W_ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

s abrl% **WATER**

nEaQabloi : × = poQ2li g blv e LreaMh / ✓ = O lbhli hoQ2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC QaL , MB							
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3Wy _ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

s abrl% **WATER**

nEaQabloi : × = p oQ2li g blv e LreaMh / ✓ = O lbhli ho Q2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC QaL , MB							
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W_ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W_ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3W_ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W_ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

s abrl% **WATER**

nEaQabloi : × = p oQ2li g blv e LreaMh / ✓ = O lbhli ho Q2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC							
QaL , MB								
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W_ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W_ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3Wy _ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W_ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

Quality Control Parameter Frequency Compliance

The foQQq li g rehorbDuv v arlDeDthe fre, uei Mi of @aLorabort k y Dav h@Dai aCDe2 qlthli the ai aCtMaCQbsDUli qhlMn the DuLv lthe2 Dav h@sDUqaDsqereUhroMeDDe2) cMuaCrabe Dhou@2 Le greaber thai or e, uaQto the e%heMe2 rabe) c QDbi g of LreaMheDIDhroE2e2 li the Auv v art of GubQerD)

s abrl% **SOIL**

nEaQabboi : × = k uaQbt y oi broCre, uei Mi obq lthli DheMfiMabboi / ✓ = k uaQbt y oi broCre, uei Mi q lthli DheMfiMabboi)

k uaQbt y oi broCAav h@ Tt he		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
4aLorabort muhQMabeD&mx PU							
s olDbure y oi bei b	ncj 55	d	19	**14.29**	**10.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	d	10	**10.53**	**10.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
4aLorabort y oi broCAav h@D&4y AU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	1	10	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s ethno2 J@i YD&s J U							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	1	10	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s abrl%AhlYeD&s AU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	1	10	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2

s abrl% **WATER**

nEaQabboi : × = k uaQbt y oi broCre, uei Mi obq lthli DheMfiMabboi / ✓ = k uaQbt y oi broCre, uei Mi q lthli DheMfiMabboi)

k uaQbt y oi broCAav h@ Tt he		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
4aLorabort muhQMabeD&mx PU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	9	5W	**7.02**	**10.00**	×	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31XRQ.	j	1	**0.00**	**10.00**	×	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
4aLorabort y oi broCAav h@D&4y AU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	3	5W	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31XRQ.	1	1	**100.00**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s ethno2 J@i YD&s J U							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	3	5W	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31XRQ.	1	1	**100.00**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s abrl%AhlYeD&s AU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	3	5W	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31XRQ.	j	1	**0.00**	**5.00**	×	QnPs dj 13 J 3 ; c4A k y Abai 2ar2

Brief Method Summaries

The ai aCtMaChroMe2ureDuDe2 Lt the ni Eroi v ei baCmIEDoi haEe Leei 2eEeGhe2 frov eDaLCDhe2 li beri atioi aCC reMogi lze2 hroMe2ureDDuMh aDthoDe huLCDhe2 Lt the x A nPc BcPpcBcA ai 2 QnPs) Ni houDe 2eEeGhe2 hroMe2ureDare ev hGt e2 li the aLDei Me of 2oMuv ei be2 Dbai 2ar2Dor Lt MQei bre, ueDb) The foGGqli g rehorbhroE2eDLrlef 2eDMIhbioi Dof the ai aCtMaChroMe2ureDev hGt e2 for reDuGDrehorbe2 li the y erbfIMabe of ci aCDID) AourMeDfrov qhIMh c4A v ethio2DhaEe Leei 2eEeGhe2 are hroE2e2 qIbhli the s ethio2 meDMIhbioi D)

Analytical Methods	Method	Matrix	Method Descriptions
s olDoure y oi bei b	nci 55	AGM4	Ni houDe: c graEv ebrIMhroMe2ure LaDe2 oi q elghbGDDoEer a 1d hour 2rt li g herlo2 ab1j 5R11j 2egreeDy) ThIDv ethio2 IDMov hGai bqIbh QnPs AMhe2uGe J &8U)
PerRai 2 PoCfQuoroaGt CAuLDbai MeD &PFcAULt 4y s As A	nPd31X	AGM4	NiRhouDe: c i aCDID of DolCDLt DoGEei be%braMbioi foGGqe2 Lt 4y RnGeMbroDhrat Rs ARs ABQegabEe s o2e uDi g s Hs uDi g li beri aCDbai 2ar2 , uai bbabioi) NDobohIMaCC GaLeGe2 ai aGgueDof bargebai aCbeDuDe2 aDli beri aC Dbai 2ar2Dai 2 DurrogabeDare a22e2 bo a horbioi of DolCqhIMh IDbhei e%braMbe2 qIbh s TJn ai 2 ai loi halrli g reageibj c horbioi of e%braMbIDe%Mhai ge2 li bo bhe ai aCtMaCDoGEei bv I%ureBMov Lli e2 qIbh ai e, uaCEoQv e reageibqaber ai 2 flGere2 for ai aCDID) s ethio2 hroMe2ureDai 2 2aba , uaCbt oLvéMbEeDMoi forv bo x A momk As 5)3BbaLGe JR15 re, ulrev ei bD)
PerRai 2 PoCfQuoroaGt CAuLDbai MeD &PFcAULt 4y s As A	nPd31X	OcTnH	NiRhouDe: c i aCDID of freDh ai 2 DaCI e qaberDLt AoC2 PhaDe n%braMbioi &APnUfoGGqe2 Lt 4y RnGeMbroDhrat Rs ARs ABQegabEe s o2e uDi g s Hs ai 2 li beri aCDbai 2ar2 , uai bbabioi) NDobohIMaCC GaLeGe2 ai aGgueDof bargebai aCbeDuDe2 aDli beri aCDbai 2ar2Dai 2 DurrogabeDare a22e2 bo bhe Dav hGe Moi bali er) The ei bre Moi bei bDare brai Dferre2 bo a DoC2 hhaDe e%braMbioi &APnUMarbrl2ge) The Dav hGe Moi bali er IDDuMMeDDIEeC rli De2 qIbh aC, uobDof bhe eQbioi DoGEei b) The eQbe2 e%braMbIDMov Lli e2 qIbh ai e, uaC EoQv e of reageibqaber ai 2 a horbioi IDflGere2 for ai aCDID) s ethio2 hroMe2ureDai 2 2aba , uaCbt oLvéMbEeD Moi forv bo x A momk As 5)3BbaLGe JR15 re, ulrev ei bD)
PerRai 2 PoCfQuoroaGt CAuLDbai MeD &PFcAULt 4y s As A	nPd31XRQ.	OcTnH	NiRhouDe: mIreMbli véMbioi ai aCDID of freDh qaberDafber 2IQubioi &I:1Uqlbh v oLIGe hhaDe DoGEei b) ci aCDIDLt 4y RnGeMbroDhrat Rs ARs ABQegabEe s o2e uDi g s Hs) O here Mov v erMaCC aEaIGaLGeBIDobohIMaCC GaLeGe2 ai aGgueDof bhe bargebai aCbeDare uDe2 aDli beri aCDbai 2ar2Dfor , uai bbflMabioi) O here a GaLeGe2 ai aGgue ID i obMov v erMaCC aEaIGaLGeBbhe li beri aCDbai 2ar2 qIbh Dv IGr Mhev IDbt ai 2 bhe MGDeDbretei bioi bv e bo bhe bargebIDuDe2 for , uai bbflMabioi) The mk G for li beri aCDbai 2ar2 reDhoi De ID 5j R15j 7 of bhabeDbaLCDhe2 abli lbhaC MaCLrabioi) PFGA ID, uai bbfle2 uDi g a Merbbfle2BbraMeaLGe Dbai 2ar2 Moi DDDi g of Cear ai 2 Lrai Mhe2 PFGA IDov erD)

Preparation Methods	Method	Matrix	Method Descriptions
k un y heHA n%braMbioi of AoC2D	GHSWd	AGM4	Ni houDe: Ae, uei bbaCe%braMbioi Dq Ibh c Mebioi IbrIGvs ethai oCLt DhaYli g) n%braMbioi effIMei M al2e2 Lt bhe a22Ibioi of DaCDui 2er aM2IMMoi 2Ibioi D) O here reGEai bBli berferei MeDfrov MobRe%braMbe2 orgai IMDare rev oEe2 qIbh 2IDherDIEe MGai Ruh v e2la &2APnU) The e%braMbIDeIbher 2IQbe2 or Moi Mei brabe2 ai 2 e%Mhai ge2 li bo bhe ai aCtMaCDoGEei b)
Preharabioi for PFcA li qaber)	nPd31RPH	OcTnH	s ethio2 hreDuv eD2IreMbli véMbioi q Ibhoubq orYuh) Preharabioi li MQ2eDa22Ibioi of li beri aCDbai 2ar2 ai 2 DurrogabeBai 2 flGrabioi hrlor bo ai aCDID)
AoC2 PhaDe n%braMbioi &APnUfor PFcA li qaber	GHSWd	OcTnH	NiRhouDe: NDobohIMaCC GaLeGe2 ai aGgueDof bargebai aCbeDuDe2 aDli beri aCDbai 2ar2Dai 2 DurrogabeDare a22e2 bo bhe Dav hGe Moi bali er) The ei bre Moi bei bDare brai Dferre2 bo a DoC2 hhaDe e%braMbioi &APnUMarbrl2ge) The Dav hGe Moi bali er IDDuMMeDDIEeC rli De2 qIbh aC, uobDof bhe eQbioi DoGEei b) The eQbe2 e%braMbIDMov Lli e2 qIbh ai e, uaCEoQv e of reageibqaber ai 2 a horbioi IDflGere2 for ai aCDID) s ethio2 hroMe2ureDMoi forv bo x A momk As 5)3BbaLGe JR15 re, ulrev ei bD)

Samples received without CoC

CLIENT / SENDER:	Cardno / STANTEC
PROJECT:	RM264 CANBCON0004
CONTACT NAME:	
CONTACT NUMBER:	
CARRIER:	Courier
CONNOTE REFERENCE:	
SAMPLER:	
NUMBER OF SAMPLES/MATRIX:	2 Aqueous.
Client services notified by:	PFAS water

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	4	5	6	7
OF:	1	2	3	4	5	6	7

SAMPLES RE[redacted]

DATE/TIME:

ANALYSIS RECEIVED BY:

DATE/TIME:

Comments

Environmental Division
Melbourne
Work Order Reference
EM2208382

Telephone : +61-3-8549 9600

LAB ID	SAMPLE DETAILS: SAMPLE ID	DATE	MATRIX	NUMBER OF CONTAINERS	Additional Information
	SW 471	3/5			
	SW 382	3/5			
	QC 104	4/5			
	QC 101				
	etc				
			TOTAL		

MEPM (4/3)

Form Page 1 of 1

CHAIN OF CUSTODY

ALS COC#: 37047 ALS Laboratory: EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana P01

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_SW396_220503		03/05/2022 01:18 PM	Water	ALS: 2 Non ALS: 0	No		X			
002	0445_SW397_220503		03/05/2022 01:19 PM	Water	ALS: 2 Non ALS: 0	No		X			
003	0445_SW400_220503		03/05/2022 01:19 PM	Water	ALS: 2 Non ALS: 0	No		X			
004	0445_SW401_220503	internal lab qc	03/05/2022 12:55 PM	Water	ALS: 6 Non ALS: 0	No		X			
005	0445_SW471_220503	internal lab qc	03/05/2022 12:32 PM	Water	ALS: 6 Non ALS: 0	No		X			
006	0445_SW487_220503		03/05/2022 01:22 PM	Water	ALS: 2 Non ALS: 0	No		X			
007	0445_SD395_220503_0.10		03/05/2022 11:10 AM	Soil	ALS: 1 Non ALS: 0	No			X		
008	0445_SD397_220503_0.10		03/05/2022 01:27 PM	Soil	ALS: 1 Non ALS: 0	No			X		
009	0445_SD396_220503_0.10		03/05/2022 01:28 PM	Soil	ALS: 1 Non ALS: 0	No			X		

CHAIN OF CUSTODY

COC#: 37047 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana P01

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

EMAIL REPORTS TO:

EMAIL INVOICES TO:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free Ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_QC102_220503		08/05/2022 08:42 PM	Water	ALS: 0 Non ALS: 0	Yes	-				

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2208382**	Page	: 1 of 3
A1 emd1 em	: t		
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Teleh- one	: ----	Teleh- one	: [redacted]
[redacted]	: [redacted]	Date Samhles Received	: 03-May-2022 15:11
Order number	: -	Date Analysis Commenced	: 14-May-2022
C-O-C number	: 470p7	Issue Date	: 02-Jun-2022 10:05
Samhler	: [redacted]		
Site	: Bandiana P01		
Quote number	: SY/143/13_Bandiana		
No. of samhles received	: 10		
No. of samhles analysed	: 3		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

T- is rehort suhersedes any hrevious rehort(s) wit- t- is reference. Results ahhly to t- e samhle(s) as submitted, unless t- e samhling was conducted by ALS. T- is document s- all not be rehroduced, exceht in full.

T- is Certificate of Analysis contains t- e following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional infor1 ation pertinent to this report will be found in the following separate attach1 ents: Quality Control Report, QA/QC Co1 pliance Assess1 ent to assist with Quality Review and Sa1 ple ReceiptNotification

Signatories

T- is document - as been electronically signed by t- e aut- orized signatories below. Electronic signing is carried out in comhliance wit- hrocedures shecified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Laboratory Coordinator	[redacted]
[redacted]	Senior Organic C- emist	[redacted]

General Comments

T- e analytical hrocedures used by ALS - ave been develohed from establis- ed internationally recognised hrocedures suc- as t- ose hublis- ed by t- e USEPA, APHA, AS and NEPM. In - ouse develohed hrocedures are fully validated and are often at t- e client request.

W- ere moisture determination - as been herformed, results are rehorted on a dry weig- t basis.

W- ere a rehorted less t- an (<) result is - ig- er t- an t- e LOR, t- is may be due to hrimary samhle extract/digestate dilution and/or insufficient samhle for analysis.

W- ere t- e LOR of a rehorted result differs from standard LOR, t- is may be due to - ig- moisture content, insufficient samhle (reduced weig- t emhloyed) or matrix interference.

W- en samhling time information is not hrovided by t- e client, samhling dates are s- own wit- out a time comhonent. In t- ese instances, t- e time comhonent - as been assumed by t- e laboratory for hrocessing hurhoses.

W- ere a result is required to meet comhliance limits t- e associated uncertainty must be considered. Refer to t- e ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by C- emical Abstracts Services. T- e C- emical Abstracts Service is a division of t- e American C- emical Society.
LOR = Limit of rehorting
^ = T- is result is comhuted from individual analyte detections at or above t- e level of rehorting
ø = ALS is not NATA accredited for t- ese tests.
~ = Indicates an estimated value.

- EP241X: Poor matrix shike recovery for samhle EM2209122-00p due to samhle matrix interference.
- EP241X - Per- and Polyfluoroalkyl Substances (PFAS): Samhles received in 20ml or 125ml bottles - ave been tested in accordance wit- t- e QSM5.4 comhliant, NATA accredited met- od. 80mL or 250mL bottles - ave been tested to t- e legacy QSM 5.1 aligned, NATA accredited met- od.
- Amendment (02/08/2022): T- is rehort - as been amended as a result of a request to c- ange samhle identification numbers (IDs) received from Abe Wrig- t on 01/08/2022, for samhles EM2209492 #7,9,3. All analysis results are as her t- e hrevious rehort.
- EP241: Stable isotohe enric- ed internal standards are added to samhles hrior to extraction. Target comhounds - ave a direct analogous internal standard wit- t- e excehtion of PFPeS, PFHhA, PFDS, PFTrDA and 10:2 FTS. T- ese comhounds use an internal standard t- at is c- emically related and - as a retention time close to t- at of t- e target comhound. T- e DQO for internal standard reshonse is 50-150% of t- at establis- ed at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branc- ed PFOS isomers. T- ese hractices are in line wit- recommendations in t- e National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SEDIMENT / Matrix: SOILB			Sample ID	0445_SD395_220503	0445_SD39) _220503	0445_SD39(_220503	----	----
			Sampling date / time	04-May-2022 11:10	04-May-2022 14:27	04-May-2022 14:29	----	----
Compound	CAS Number	LOR	Unit	EM2208382-00)	EM2208382-008	EM2208382-009	-------	--------
				Result	Result	Result	----	----
EA055: Moisrure Conrenn Dried 6 t 05-t t 0xCB								
Moisrure Conrenn	----	0.1	%	35.t	44.t	(.3	----	----
E723t A: 7erfluoroalkyl Sulfonic Acids								
7erfluoroburane sulfonic acid P7F@SB	475-74-5	0.0002	mg/kg	<0.0002	0.0008	0.0008	----	----
7erfluoropenrane sulfonic acid P7F7eSB	2708-31-p	0.0002	mg/kg	<0.0002	0.002t	0.00t 4	----	----
7erfluorohe°ane sulfonic acid P7FH°SB	455-p8-p	0.0002	mg/kg	0.0003	0.024(	0.0t 93	----	----
7erfluoroheprane sulfonic acid P7FHpSB	475-32-9	0.0002	mg/kg	<0.0002	0.00t (	0.0009	----	----
7erfluoroocrane sulfonic acid P7FOSB	1784-24-1	0.0002	mg/kg	0.005(	0.0t 9(	0.0t 80	----	----
7erfluorodecane sulfonic acid P7FDSB	445-77-4	0.0002	mg/kg	0.0002	<0.0002	<0.0002	----	----
E723t @ 7erfluoroalkyl Carbo°ylic Acids								
7erfluoroburanoic acid P7F@AB	475-22-p	0.001	mg/kg	<0.001	<0.001	<0.001	----	----
7erfluoropenranoic acid P7F7eAB	2708-30-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
7erfluorohe°anoic acid P7FH°AB	407-2p-p	0.0002	mg/kg	<0.0002	0.0008	0.0009	----	----
7erfluoroheptanoic acid P7FHpAB	475-95-3	0.0002	mg/kg	<0.0002	0.0002	<0.0002	----	----
7erfluoroocranoic acid P7FOAB	445-87-1	0.0002	mg/kg	<0.0002	0.0004	<0.0002	----	----
7erfluorononanoic acid P7FNAB	475-35-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
7erfluorodecanoic acid P7FDAB	445-78-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
7erfluoroundecanoic acid P7FUnDAB	2059-3p-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
7erfluorododecanoic acid P7FDoDAB	407-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
7erfluorotridecanoic acid P7FTrDAB	72823-3p-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
7erfluorotetradecanoic acid P7FTeDAB	478-08-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
E723t C: 7erfluoroalkyl Sulfonamides								
7erfluoroocrane sulfonamide PFOSAB	75p-31-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
N-Methyl perfluoroocrane sulfonamide PMeFOSAB	41508-42-9	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----

Analytical Results

Sub-Matrix: SEDIMENT PMatrix: SOILB			Sample ID	0445_SD395_220503	0445_SD39) _220503	0445_SD39(_220503	----	----
			Sampling date / time	04-May-2022 11:10	04-May-2022 14:27	04-May-2022 14:29	----	----
Compound	CAS Number	LOR	Unit	EM2208382-00)	EM2208382-008	EM2208382-009	-------	--------
				Result	Result	Result	----	----
E723t C: 7erfluoroalkyl Sulfona1 ides - Comimued								
N-Erhyl perfluorooctane sulfona1 ide PErFOSAB	p151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Merhyl perfluorooctane sulfona1 idoerhanol PMeFOSEB	2ppp9-03-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Erhyl perfluorooctane sulfona1 idoerhanol PErFOSEB	1831-33-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Merhyl perfluorooctane sulfona1 idoaceric acid PMeFOSAAB	2455-41-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
N-Erhyl perfluorooctane sulfona1 idoaceric acid PErFOSAAB	2331-50-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
E723t D: Rm2BFluorornelo1 er Sulfonic Acids								
4:2 Fluorornelo1 er sulfonic acid P4:2 FTSB	75712p-72-p	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
(:2 Fluorornelo1 er sulfonic acid P(:2 FTSB	27813-37-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
8:2 Fluorornelo1 er sulfonic acid P8:2 FTSB	43109-4p-p	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
t 0:2 Fluorornelo1 er sulfonic acid P t 0:2 FTSB	120228-80-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
E723t 7 : 7FAS Su1 s								
Su1 of 7FAS	----	0.0002	mg/kg	**0.00(t**	**0.050t**	**0.04t 3**	----	----
Su1 of 7FH° S and 7FOS	455-p8-p/1784-24-1	0.0002	mg/kg	**0.0059**	**0.0442**	**0.03) 3**	----	----
Su1 of 7FAS PWA DER LisrB	----	0.0002	mg/kg	**0.0059**	**0.04(4**	**0.0390**	----	----
E723t S: 7FAS Surrogare								
t 3C4-7FOS	----	0.0002	%	**93.t**	**t 25**	**t 03**	----	----
t 3C8-7FOA	----	0.0002	%	**93.9**	**93.)**	**92.0**	----	----

Analytical Results

Sub-Matrix: SURFACE WATER
PMatrix: WATERB

Compound	CAS Number	LOR	Unit	Sample ID	0445_SW39(_220503	0445_SW39) _220503	0445_SW400_220503	0445_SW40t _220503 immermal lab qc	0445_SW4) t _220503 immermal lab qc
				Sampling date / time	04-May-2022 14:19	04-May-2022 14:13	04-May-2022 14:13	04-May-2022 12:55	04-May-2022 12:42
					EM2208382-00t	EM2208382-002	EM2208382-003	EM2208382-004	EM2208382-005
					Result	Result	Result	Result	Result
E723t A: 7erfluoroalkyl Sulfonic Acids									
7erfluoroburame sulfonic acid P7F@SB	475-74-5	0.02	µg/L		0.2t	0.(4	0.0)	0.0)	0.45
7erfluoropemame sulfonic acid P7F7eSB	2708-31-p	0.02	µg/L		0.t9	0.(8	0.05	0.0(	0.40
7erfluorohe°ame sulfonic acid P7FH°SB	455-p8-p	0.01	µg/L		t.(5	4.32	0.33	0.33	2.30
7erfluoroheptame sulfonic acid P7FHpSB	475-32-9	0.02	µg/L		0.05	0.30	<0.02	<0.02	0.t2
7erfluoroocname sulfonic acid P7FOSB	1784-24-1	0.01	µg/L		0.5)	3.99	0.22	0.t8	t.t4
7erfluorodecame sulfonic acid P7FDSB	445-77-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
E723t @ 7erfluoroalkyl Carbo°ylic Acids									
7erfluoroburamoic acid P7F@AB	475-22-p	0.1	µg/L		<0.1	0.t	<0.1	<0.1	<0.1
7erfluoropemamoic acid P7F7eAB	2708-30-4	0.02	µg/L		0.0(	0.2)	<0.02	<0.02	0.t4
7erfluorohe°amoic acid P7FH°AB	407-2p-p	0.02	µg/L		0.t)	0.8)	0.0(	0.0(	0.4(
7erfluoroheptamoic acid P7FHpAB	475-95-3	0.02	µg/L		0.04	0.20	<0.02	<0.02	0.t2
7erfluoroocnamoic acid P7FOAB	445-87-1	0.01	µg/L		0.05	0.34	0.02	0.02	0.t5
7erfluorononamoic acid P7FNAB	475-35-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
7erfluorodecamoic acid P7FDAB	445-78-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
7erfluoroundecamoic acid P7FUnDAB	2059-3p-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
7erfluorododecamoic acid P7FDoDAB	407-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
7erfluorotridecamoic acid P7FTrDAB	72823-3p-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
7erfluorotetradecamoic acid P7FTeDAB	478-08-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
E723t C: 7erfluoroalkyl Sulfona1ides									
7erfluoroocname sulfona1ide PFOSAB	75p-31-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluoroocname sulfona1ide PMeFOSAB	41508-42-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluoroocname sulfona1ide PEtFOSAB	p151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER PMatrix: WATERB				Sample ID	0445_SW39(_220503	0445_SW39)_220503	0445_SW400_220503	0445_SW40t_220503 imermal lab qc	0445_SW4)t_220503 imermal lab qc
				Sampling date / time	04-May-2022 14:19	04-May-2022 14:13	04-May-2022 14:13	04-May-2022 12:55	04-May-2022 12:42
Compound	CAS Number	LOR	Unit		EM2208382-00t	EM2208382-002	EM2208382-003	EM2208382-004	EM2208382-005
					Result	Result	Result	Result	Result
E723t C: 7erfluoroalkyl Sulfona1 ides - Conmued									
N-Merhyl perfluorooctane sulfona1 idoerhanol PMeFOSEB	2ppp9-03-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Erhyl perfluorooctane sulfona1 idoerhanol PErFOSEB	1831-33-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Merhyl perfluorooctane sulfona1 idoaceric acid PMeFOSAAB	2455-41-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Erhyl perfluorooctane sulfona1 idoaceric acid PErFOSAAB	2331-50-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
E723t D: Pm2BFluorornelo1 er Sulfonic Acids									
4:2 Fluorornelo1 er sulfonic acid P4:2 FTSB	75712p-72-p	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
(:2 Fluorornelo1 er sulfonic acid P(:2 FTSB	27813-37-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorornelo1 er sulfonic acid P8:2 FTSB	43109-4p-p	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
t0:2 Fluorornelo1 er sulfonic acid P0:2 FTSB	120228-80-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
E723t 7: 7FAS Su1 s									
Su1 of 7FAS	----	0.01	µg/L		**2.99**	**tt.)**	**0.)5**	**0.)2**	**5.28**
Su1 of 7FH°S and 7FOS	455-p8-p/1784-24-1	0.01	µg/L		**2.22**	**8.3t**	**0.55**	**0.5t**	**3.44**
Su1 of 7FAS PWA DER LisrB	----	0.01	µg/L		**2.)5**	**t0.)**	**0.)0**	**0.((**	**4.)(**
E723t S: 7FAS Surrogare									
t3C4-7FOS	----	0.02	%		**93.4**	**t08**	**99.3**	**99.4**	**t03**
t3C8-7FOA	----	0.02	%		**9(.3**	**9(.9**	**98.2**	**9(.(**	**9(.(**

Analytical Results

Sub-Matrix: SURFACE WATER PMatrix: WATERB				Sample ID	0445_SW48) _220503	----	----	----	----
				Sampling date / time	04-May-2022 14:22	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208382-00(	--------	--------	--------	--------
					Result	----	----	----	----
E723t A: 7erfluoroalkyl Sulfonic Acids									
7erfluoroburane sulfonic acid PF@SB	475-74-5	0.02	µg/L		**0.(4**	----	----	----	----
7erfluoropenrane sulfonic acid PF7eSB	2708-31-p	0.02	µg/L		**0.(t**	----	----	----	----
7erfluorohe°ane sulfonic acid PFH°SB	455-p8-p	0.01	µg/L		**3.58**	----	----	----	----
7erfluoroheprane sulfonic acid PFHpSB	475-32-9	0.02	µg/L		**0.29**	----	----	----	----
7erfluoroocrane sulfonic acid PFOSB	1784-24-1	0.01	µg/L		**4.t 3**	----	----	----	----
7erfluorodecane sulfonic acid PFDSB	445-77-4	0.02	µg/L		<0.02	----	----	----	----
E723t @ 7erfluoroalkyl Carbo°ylic Acids									
7erfluoroburanoic acid PF@AB	475-22-p	0.1	µg/L		**0.t**	----	----	----	----
7erfluoropenranoic acid PF7eAB	2708-30-4	0.02	µg/L		**0.25**	----	----	----	----
7erfluorohe°anoic acid PFH°AB	407-2p-p	0.02	µg/L		**0.8(**	----	----	----	----
7erfluoroheptanoic acid PFHpAB	475-95-3	0.02	µg/L		**0.t 9**	----	----	----	----
7erfluoroocranoic acid PFOAB	445-87-1	0.01	µg/L		**0.32**	----	----	----	----
7erfluorononanoic acid PFNAB	475-35-1	0.02	µg/L		<0.02	----	----	----	----
7erfluorodecanoic acid PFDAB	445-78-2	0.02	µg/L		<0.02	----	----	----	----
7erfluoroundecanoic acid PFUnDAB	2059-3p-9	0.02	µg/L		<0.02	----	----	----	----
7erfluorododecanoic acid PFDoDAB	407-55-1	0.02	µg/L		<0.02	----	----	----	----
7erfluorotridecanoic acid PFTrDAB	72823-3p-9	0.02	µg/L		<0.02	----	----	----	----
7erfluorotetradecanoic acid PFTeDAB	478-08-7	0.05	µg/L		<0.05	----	----	----	----
E723t C: 7erfluoroalkyl Sulfona1 ides									
7erfluoroocrane sulfona1 ide PFOSAB	75p-31-8	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluoroocrane sulfona1 ide MeFOSAB	41508-42-9	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluoroocrane sulfona1 ide EtFOSAB	p151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER PMatrix: WATERB				Sample ID	0445_SW48) _220503	----	----	----	----
				Sampling date / time	04-May-2022 14:22	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208382-00(	--------	--------	--------	--------
					Result	----	----	----	----
E723t C: 7erfluoroalkyl Sulfona1 ides - Conmued									
N-Merhyl perfluoroocrame sulfona1 idoerhanol PMeFOSEB	2ppp9-03-7	0.05	µg/L		<0.05	----	----	----	----
N-Erhyl perfluoroocrame sulfona1 idoerhanol PErFOSEB	1831-33-2	0.05	µg/L		<0.05	----	----	----	----
N-Merhyl perfluoroocrame sulfona1 idoaceric acid PMeFOSAAB	2455-41-3	0.02	µg/L		<0.02	----	----	----	----
N-Erhyl perfluoroocrame sulfona1 idoaceric acid PErFOSAAB	2331-50-8	0.02	µg/L		<0.02	----	----	----	----
E723t D: Rm2BFluororelo1 er Sulfonic Acids									
4:2 Fluororelo1 er sulfonic acid P4:2 FTSB	75712p-72-p	0.05	µg/L		<0.05	----	----	----	----
(:2 Fluororelo1 er sulfonic acid P(:2 FTSB	27813-37-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluororelo1 er sulfonic acid P8:2 FTSB	43109-4p-p	0.05	µg/L		<0.05	----	----	----	----
t 0:2 Fluororelo1 er sulfonic acid P t 0:2 FTSB	120228-80-0	0.05	µg/L		<0.05	----	----	----	----
E723t 7 : 7FAS Su1 s									
Su1 of 7FAS	----	0.01	µg/L		t t .0	----	----	----	----
Su1 of 7FH° S and 7FOS	455-p8-p/1784-24-1	0.01	µg/L		) .) t	----	----	----	----
Su1 of 7FAS PWA DER LisrB	----	0.01	µg/L		t 0.t	----	----	----	----
E723t S: 7FAS Surrogare									
t 3C4-7FOS	----	0.02	%		t 00	----	----	----	----
t 3C8-7FOA	----	0.02	%		98.0	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
E723t S: 7FAS Surrogate			
t3C4-7FOS	----	89	148
t3C8-7FOA	----	83	144

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
E723t S: 7FAS Surrogate			
t3C4-7FOS	----	85	1p0
t3C8-7FOA	----	71	144

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: EM2208382	Page	: o f 7o1
A1 emd1 em	: t		
Client	: DONT NOT USE - LOG UNDER MWHAUS	Labf ratf ry	: Envirf nmental Divisif n Melbf urne
Cf ntact	: [redacted]	Cf ntact	: [redacted]
[redacted]	: [redacted]	Address	: [redacted]
Telephf ne	: ----	Telephf ne	: [redacted]
Prf ject	: VIC_044, _PFASOMP	Date Samples Received	: 09-May-1011
Order number	: -	Date Analysis Cf mmenced	: o3-May-1011
C-O-C number	: 35045	Issue Date	: 01-Hun-1011
Sampler	: [redacted]		
Site	: Bandiana P0o		
Quf te number	: SY/o39/o9_Bandiana		
Nf . f 7samples received	: o0		
Nf . f 7samples analysed	: 9		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This repf rt supersedes any previf us repf rt(s) with this re7erence. Results apply tf the sample(s) as submitted2 unless the sampling was cf nducted by ALS. This df cument shall nf t be reprf duced2except in 7ull.

This Quality Cf ntrf l Repf rt cf ntains the 7f llf wing in7f rmatif n:

- Labf ratf ry Duplicate (DUP) Repf rt; Relative Percentage Di7erence (RPD) and Acceptance Limits
- Methf d Blank (MB) and Labf ratf ry Cf ntrf l Spike (LCS) Repf rt; Recf very and Acceptance Limits
- Matrix Spike (MS) Repf rt; Recf very and Acceptance Limits

Signatories

This df cument has been electrf nically signed by the authf rized signatf ries belf w. Electrf nic signing is carried f ut in cf mpliance with prf cedures speci7ed in 1o CFR Part oo.

Signatories	*Position*	*Accreditation Category*
[redacted]	Labf ratf ry Cf f rdinatf r Senif r Organic Chemist	[redacted]

Page	:	1 f 7o1
Wf rk Order	:	EM1108381 Amendment o
Client	:	DONT NOT USE - LOG UNDER MWHAUS
Prf ject	:	VIC_044, _PFASOMP

General Comments

The analytical prf cedures used by ALS have been develf ped 7rf m established internatif nally recf gnised prf cedures such as thf se published by the USEPA2 APHA2 AS and NEPM. In hf use develf ped prf cedures are 7ully validated and are f 7ten at the client request.

Where mf isture determinatif n has been per7rmed2results are repf rted f n a dry weight basis.

Where a repf rted less than (<) result is higher than the LOR2 this may be due tf primary sample extract/digestate dilutif n and/f r insu7icient sample 7r analysis. Where the LOR f 7 a repf rted result di7ers 7rf m standard LOR2this may be due tf high mf isture cf ntent2insu7icient sample (reduced weight emplf yed) f r matrix inter7erence.

Key : Anf nymf us = Re7ers tf samples which are nf t speci7cally part f 7this wf rk f rder but 7r rmed part f 7the QC prf cess lf t
CAS Number = CAS registry number 7rf m database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a divisif n f 7the American Chemical Sf ciety.
LOR = Limit f 7repf rting
RPD = Relative Percentage Di7erence
= Indicates 7ailed QC

Laboratory Duplicate (DUP) Report

The quality cf ntrf l term Labf ratf ry Duplicate re7ers tf a randf mly selected intralabf ratf ry split. Labf ratf ry duplicates prf vide in7rmatif n regarding methf d precisif n and sample heterf geneity. The permitted ranges 7r the Relative Percent Deviatif n (RPD) f 7 Labf ratf ry Duplicates are speci7ed in ALS Methf d QWI-EN/38 and are dependent f n the magnitude f 7 results in cf mparisf n tf the level f 7 repf rting: Result < o0 times LOR: Nf Limit; Result between o0 and 10 times LOR: 0% - , 0%; Result > 10 times LOR: 0% - 10%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisnure Conem(Dried @ t 05-t t 0°C) (QC Lon 4343369)									
EM110838o-040	Anf nymf us	EA0, , : Mf isture Cf ntent	----	0.o	%	43.8	4, .1	3.1	0% - 10%
EM1108383-011	Anf nymf us	EA0, , : Mf isture Cf ntent	----	0.o	%	34.8	34.,	o.0	0% - 10%
EP23t A: Perfluoroalkyl Sulfonic Acids (QC Lon 434t 56t)									
EM1108o11-00o	Anf nymf us	EP13oX: Per7uf rf butane sul7f nic acid (PFBS)	35, -53-,	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf pentane sul7f nic acid (PFPeS)	1506-9o-4	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf hexane sul7f nic acid (PFHxS)	3, , -46-4	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf heptane sul7f nic acid (PFHpS)	35, -91-8	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf f ctane sul7f nic acid (PFOS)	o563-13-o	0.0001	mg/kg	0.0003	0.0008	89.6	Nf Limit
		EP13oX: Per7uf rf decane sul7f nic acid (PFDS)	33, -55-3	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
EM1108381-005	044, _SD39, _110, 03	EP13oX: Per7uf rf butane sul7f nic acid (PFBS)	35, -53-,	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf pentane sul7f nic acid (PFPeS)	1506-9o-4	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf hexane sul7f nic acid (PFHxS)	3, , -46-4	0.0001	mg/kg	0.0003	0.0004	0.0	Nf Limit
		EP13oX: Per7uf rf heptane sul7f nic acid (PFHpS)	35, -91-8	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf f ctane sul7f nic acid (PFOS)	o563-13-o	0.0001	mg/kg	0.00, 6	0.0045	o8.1	0% - 10%
		EP13oX: Per7uf rf decane sul7f nic acid (PFDS)	33, -55-3	0.0001	mg/kg	0.0001	0.0001	0.0	Nf Limit
EP23t B: Perfluoroalkyl Carboxylic Acids (QC Lon 434t 56t)									
EM1108o11-00o	Anf nymf us	EP13oX: Per7uf rf pentanf ic acid (PFPeA)	1506-90-3	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf hexanf ic acid (PFHxA)	305-14-4	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf heptanf ic acid (PFHpA)	35, -8, -9	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf f ctanf ic acid (PFOA)	33, -65-o	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf nf nanf ic acid (PFNA)	35, -9, -o	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf decanf ic acid (PFDA)	33, -56-1	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf undecanf ic acid (PFUnDA)	10, 8-94-8	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf df decanf ic acid (PFDf DA)	305-, , -o	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP23t B: Perfluoroalkyl Carboxylic Acids (QC Lon 434t 56t) - commued									
EM1108o11-00o	Anf nymf us	EP13oX: Per7uf rf tridecanf ic acid (PFTrDA)	51619-94-8	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf tetradecanf ic acid (PFTeDA)	356-06-5	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: Per7uf rf butanf ic acid (PFBA)	35, -11-4	0.00o	mg/kg	<0.00o	<0.00o	0.0	Nf Limit
EM1108381-005	044, _SD39, _110, 03	EP13oX: Per7uf rf pentanf ic acid (PFPeA)	1506-90-3	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf hexanf ic acid (PFHxA)	305-14-4	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf heptanf ic acid (PFHpA)	35, -8, -9	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf f ctanf ic acid (PFOA)	33, -65-o	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf nf nanf ic acid (PFNA)	35, -9, -o	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf decanf ic acid (PFDA)	33, -56-1	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf undecanf ic acid (PFUnDA)	10, 8-94-8	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf df decanf ic acid (PFDf DA)	305-, , -o	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf tridecanf ic acid (PFTrDA)	51619-94-8	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: Per7uf rf tetradecanf ic acid (PFTeDA)	356-06-5	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: Per7uf rf butanf ic acid (PFBA)	35, -11-4	0.00o	mg/kg	<0.00o	<0.00o	0.0	Nf Limit
EP23t C: Perfluoroalkyl Sulfona1 ides (QC Lon 434t 56t)									
EM1108o11-00o	Anf nymf us	EP13oX: Per7uf rf f ctane sul7f namide (FOSA)	5, 4-9o-6	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf acetic acid (MeFOSAA)	13, , -3o-9	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf acetic acid (EtFOSAA)	199o-, 0-6	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namide (MeFOSA)	3o, 06-31-8	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namide (EtFOSA)	4o, o-, 0-1	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf ethanf l (MeFOSE)	14448-09-5	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf ethanf l (EtFOSE)	o69o-99-1	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
EM1108381-005	044, _SD39, _110, 03	EP13oX: Per7uf rf f ctane sul7f namide (FOSA)	5, 4-9o-6	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf acetic acid (MeFOSAA)	13, , -3o-9	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf acetic acid (EtFOSAA)	199o-, 0-6	0.0001	mg/kg	<0.0001	<0.0001	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namide (MeFOSA)	3o, 06-31-8	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namide (EtFOSA)	4o, o-, 0-1	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf ethanf l (MeFOSE)	14448-09-5	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf ethanf l (EtFOSE)	o69o-99-1	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP23t D: (m2) Fluorore·lo1 er Sulfonic Acids (QC Lon 434t 56t)									
EM1108o11-00o	Anf nymf us	EP13oX: 4:1 Fluf rf telf mer sulf nic acid (4:1 FTS)	5, 5o14-51-4	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: 6:1 Fluf rf telf mer sulf nic acid (6:1 FTS)	156o9-95-1	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: 8:1 Fluf rf telf mer sulf nic acid (8:1 FTS)	39o08-34-4	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: o0:1 Fluf rf telf mer sulf nic acid (o0:1 FTS)	o10116-60-0	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
EM1108381-005	044, _SD39, _110, 03	EP13oX: 4:1 Fluf rf telf mer sulf nic acid (4:1 FTS)	5, 5o14-51-4	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: 6:1 Fluf rf telf mer sulf nic acid (6:1 FTS)	156o9-95-1	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: 8:1 Fluf rf telf mer sulf nic acid (8:1 FTS)	39o08-34-4	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
		EP13oX: o0:1 Fluf rf telf mer sulf nic acid (o0:1 FTS)	o10116-60-0	0.000,	mg/kg	<0.000,	<0.000,	0.0	Nf Limit
EP23t P: PFAS Su1 s (QC Lon 434t 56t)									
EM1108o11-00o	Anf nymf us	EP13oX: Sum f 7PFAS	----	0.0001	mg/kg	0.0003	0.0008	90.9	Nf Limit
		EP13oX: Sum f 7PFHxS and PFOS	3, , -46-4/o563-13-o	0.0001	mg/kg	0.0003	0.0008	90.9	Nf Limit
		EP13oX: Sum f 7PFAS (WA DER List)	----	0.0001	mg/kg	0.0003	0.0008	90.9	Nf Limit
EM1108381-005	044, _SD39, _110, 03	EP13oX: Sum f 7PFAS	----	0.0001	mg/kg	0.006o	0.00, 3	o4.0	0% - 10%
		EP13oX: Sum f 7PFHxS and PFOS	3, , -46-4/o563-13-o	0.0001	mg/kg	0.00, 9	0.00, o	o4.,	0% - 10%
		EP13oX: Sum f 7PFAS (WA DER List)	----	0.0001	mg/kg	0.00, 9	0.00, o	o4.,	0% - 10%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP23t A: Perfluoroalkyl Sulfonic Acids (QC Lon 434t 527)									
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: Per7luf rf hexane sulf nic acid (PFHxS)	3, , -46-4	0.0o	µg/L	0.33	0.33	0.0	0% - 10%
		EP13oX: Per7luf rf f ctane sulf nic acid (PFOS)	o563-13-o	0.0o	µg/L	0.o8	0.o9	0.0	0% - , 0%
		EP13oX: Per7luf rf butane sulf nic acid (PFBS)	35, -53-,	0.01	µg/L	0.05	0.06	0.0	Nf Limit
		EP13oX: Per7luf rf pentane sulf nic acid (PFPeS)	1506-9o-4	0.01	µg/L	0.06	0.06	0.0	Nf Limit
		EP13oX: Per7luf rf heptane sulf nic acid (PFHpS)	35, -91-8	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7luf rf decane sulf nic acid (PFDS)	33, -55-3	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
EM1108381-00,	044, _SW45o_110, 03 internal lab qc	EP13oX: Per7luf rf hexane sulf nic acid (PFHxS)	3, , -46-4	0.0o	µg/L	1.30	1., 1	9.o	0% - 10%
		EP13oX: Per7luf rf f ctane sulf nic acid (PFOS)	o563-13-o	0.0o	µg/L	o.o4	o.o5	1.4	0% - 10%
		EP13oX: Per7luf rf butane sulf nic acid (PFBS)	35, -53-,	0.01	µg/L	0.4,	0.43	3.,	0% - 10%
		EP13oX: Per7luf rf pentane sulf nic acid (PFPeS)	1506-9o-4	0.01	µg/L	0.40	0.4o	4.1	0% - 10%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP23t A: Perfluoroalkyl Sulfonic Acids (QC Lon 434t 527) - continued									
EM1108381-00,	044, _SW45o_110, 03 internal lab qc	EP13oX: Per7uf rf heptane sul7f nic acid (PFHpS)	35, -91-8	0.01	µg/L	0.o1	0.oo	0.0	Nf Limit
		EP13oX: Per7uf rf decane sul7f nic acid (PFDS)	33, -55-3	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
EP23t B: Perfluoroalkyl Carboxylic Acids (QC Lon 434t 527)									
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: Per7uf rf f ctanf ic acid (PFOA)	33, -65-o	0.0o	µg/L	0.01	0.01	0.0	Nf Limit
		EP13oX: Per7uf rf pentanf ic acid (PFPeA)	1506-90-3	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf hexanf ic acid (PFHxA)	305-14-4	0.01	µg/L	0.06	0.0,	0.0	Nf Limit
		EP13oX: Per7uf rf heptanf ic acid (PFHpA)	35, -8, -9	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf nf nanf ic acid (PFNA)	35, -9, -o	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf decanf ic acid (PFDA)	33, -56-1	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf undecanf ic acid (PFUnDA)	10, 8-94-8	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf df decanf ic acid (PFDf DA)	305-, , -o	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf tridecanf ic acid (PFTrDA)	51619-94-8	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf tetradecanf ic acid (PFTeDA)	356-06-5	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: Per7uf rf butanf ic acid (PFBA)	35, -11-4	0.o	µg/L	<0.o	<0.o	0.0	Nf Limit
EM1108381-00,	044, _SW45o_110, 03 internal lab qc	EP13oX: Per7uf rf f ctanf ic acid (PFOA)	33, -65-o	0.0o	µg/L	0.o,	0.o,	0.0	0% - , 0%
		EP13oX: Per7uf rf pentanf ic acid (PFPeA)	1506-90-3	0.01	µg/L	0.o4	0.o4	0.0	Nf Limit
		EP13oX: Per7uf rf hexanf ic acid (PFHxA)	305-14-4	0.01	µg/L	0.46	0.4,	1.8	0% - 10%
		EP13oX: Per7uf rf heptanf ic acid (PFHpA)	35, -8, -9	0.01	µg/L	0.o1	0.oo	0.0	Nf Limit
		EP13oX: Per7uf rf nf nanf ic acid (PFNA)	35, -9, -o	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf decanf ic acid (PFDA)	33, -56-1	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf undecanf ic acid (PFUnDA)	10, 8-94-8	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf df decanf ic acid (PFDf DA)	305-, , -o	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf tridecanf ic acid (PFTrDA)	51619-94-8	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: Per7uf rf tetradecanf ic acid (PFTeDA)	356-06-5	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: Per7uf rf butanf ic acid (PFBA)	35, -11-4	0.o	µg/L	<0.o	<0.o	0.0	Nf Limit
EP23t C: Perfluoroalkyl Sulfona1 ides (QC Lon 434t 527)									
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: Per7uf rf f ctane sul7f namide (FOSA)	5, 4-9o-6	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf acetic acid (MeFOSAA)	13, , -3o-9	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf acetic acid (EtFOSAA)	199o-, 0-6	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namide (MeFOSA)	3o, 06-31-8	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namide (EtFOSA)	4o, o-, 0-1	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP23t C: Perfluoroalkyl Sulfona1 ides (QC Lon 434t 527) - continued									
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: N-Methyl per7uf rf f ctane sul7f namidf ethanf l (MeFOSE)	14448-09-5	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf ethanf l (EtFOSE)	o69o-99-1	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
EM1108381-00,	044, _SW45o_110, 03 internal lab qc	EP13oX: Per7uf rf f ctane sul7f namide (FOSA)	5, 4-9o-6	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf acetic acid (MeFOSAA)	13, , -3o-9	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf acetic acid (EtFOSAA)	199o-, 0-6	0.01	µg/L	<0.01	<0.01	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namide (MeFOSA)	3o, 06-31-8	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namide (EtFOSA)	4o, o-, 0-1	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf ethanf l (MeFOSE)	14448-09-5	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf ethanf l (EtFOSE)	o69o-99-1	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
EP23t D: (m2) Fluorotelo1 er Sulfonic Acids (QC Lon 434t 527)									
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: 4:1 Fluf rf telf mer sul7f nic acid (4:1 FTS)	5, 5o14-51-4	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: 6:1 Fluf rf telf mer sul7f nic acid (6:1 FTS)	156o9-95-1	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: 8:1 Fluf rf telf mer sul7f nic acid (8:1 FTS)	39o08-34-4	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: o0:1 Fluf rf telf mer sul7f nic acid (o0:1 FTS)	o10116-60-0	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
EM1108381-00,	044, _SW45o_110, 03 internal lab qc	EP13oX: 4:1 Fluf rf telf mer sul7f nic acid (4:1 FTS)	5, 5o14-51-4	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: 6:1 Fluf rf telf mer sul7f nic acid (6:1 FTS)	156o9-95-1	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: 8:1 Fluf rf telf mer sul7f nic acid (8:1 FTS)	39o08-34-4	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
		EP13oX: o0:1 Fluf rf telf mer sul7f nic acid (o0:1 FTS)	o10116-60-0	0.0,	µg/L	<0.0,	<0.0,	0.0	Nf Limit
EP23t P: PFAS Su1 s (QC Lon 434t 527)									
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: Sum f 7PFAS	----	0.0o	µg/L	0.51	0.5o	o.4	0% - 10%
		EP13oX: Sum f 7PFHxS and PFOS	3, , -46-4/o563-13-o	0.0o	µg/L	0., o	0., 1	o.9	0% - 10%
		EP13oX: Sum f 7PFAS (WA DER List)	----	0.0o	µg/L	0.66	0.6,	o.,	0% - 10%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP23t P: PFAS Su1 s (QC Lon 434t 527) - conmued									
EM1108381-00,	044, _SW45o_110, 03 internal lab qc	EP13oX: Sum f 7PFAS	----	0.0o	µg/L	, .18	, .49	3.9	0% - 10%
		EP13oX: Sum f 7PFHxS and PFOS	3, , -46-4/o563-13-o	0.0o	µg/L	3.44	3.69	5.0	0% - 10%
		EP13oX: Sum f 7PFAS (WA DER List)	----	0.0o	µg/L	4.56	4.95	4.3	0% - 10%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality cf ntrf l term Methf d / Labf ratf ry Blank re7ers tf an analyte 7ee matrix tf which all reagents are added in the same vf lumes f r prf pf rtif ns as used in standard sample preparatif n. The purpf se f 7 this QC parameter is tf mf nitf r pf tential labf ratf ry cf ntaminatif n. The quality cf ntrf l term Labf ratf ry Cf ntrf l Sample (LCS) re7ers tf a certi7ed re7erence material2 f r a knf wn inter7erence 7ee matrix spiked with target analytes. The purpf se f 7this QC parameter is tf mf nitf r methf d precisif n and accuracy independent f 7sample matrix. Dynamic Recf very Limits are based f n statistical evaluatif n f 7prf cessed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP23t A: Perfluoroalkyl Sulfonic Acids (QCLon 434t 56t)								
EP13oX: Per7luf rf butane sulf7 nic acid (PFBS)	35, -53-,	0.0001	mg/kg	<0.0001	0.00ooo mg/kg	96.3	51.0	o18
EP13oX: Per7luf rf pentane sulf7 nic acid (PFPeS)	1506-9o-4	0.0001	mg/kg	<0.0001	0.00oo8 mg/kg	oo1	53.0	o13
EP13oX: Per7luf rf hexane sulf7 nic acid (PFHxS)	3, , -46-4	0.0001	mg/kg	<0.0001	0.00o4 mg/kg	5, .8	65.0	o30
EP13oX: Per7luf rf heptane sulf7 nic acid (PFHpS)	35, -91-8	0.0001	mg/kg	<0.0001	0.00oo9 mg/kg	o05	50.0	o31
EP13oX: Per7luf rf f ctane sulf7 nic acid (PFOS)	o563-13-o	0.0001	mg/kg	<0.0001	0.00oo6 mg/kg	56.4	68.0	o36
EP13oX: Per7luf rf decane sulf7 nic acid (PFDS)	33, -55-3	0.0001	mg/kg	<0.0001	0.00o1o mg/kg	58.o	, 9.0	o34
EP23t B: Perfluoroalkyl Carboxylic Acids (QCLon 434t 56t)								
EP13oX: Per7luf rf butanf ic acid (PFBA)	35, -11-4	0.00o	mg/kg	<0.00o	0.0061, mg/kg	81.1	5o.0	o3,
EP13oX: Per7luf rf pentanf ic acid (PFPeA)	1506-90-3	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	83.6	69.0	o31
EP13oX: Per7luf rf hexanf ic acid (PFHxA)	305-14-4	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	9o.,	50.0	o31
EP13oX: Per7luf rf heptanf ic acid (PFHpA)	35, -8, -9	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	85.8	5o.0	o3o
EP13oX: Per7luf rf f ctanf ic acid (PFOA)	33, -65-o	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	8, .1	69.0	o33
EP13oX: Per7luf rf nf nanf ic acid (PFNA)	35, -9, -o	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	58.o	51.0	o19
EP13oX: Per7luf rf decanf ic acid (PFDA)	33, -56-1	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	91.4	69.0	o33
EP13oX: Per7luf rf undecanf ic acid (PFUnDA)	10, 8-94-8	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	9o.4	64.0	o36
EP13oX: Per7luf rf df decanf ic acid (PFDf DA)	305-, , -o	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	84.0	69.0	o3,
EP13oX: Per7luf rf tridecanf ic acid (PFTrDA)	51619-94-8	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	58.o	66.0	o39
EP13oX: Per7luf rf tetradecanf ic acid (PFTeDA)	356-06-5	0.000,	mg/kg	<0.000,	0.003o1 mg/kg	86.6	69.0	o33
EP23t C: Perfluoroalkyl Sulfom1 ides (QCLon 434t 56t)								
EP13oX: Per7luf rf f ctane sulf7 namide (FOSA)	5, 4-9o-6	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	8, .9	65.0	o35
EP13oX: N-Methyl per7luf rf f ctane sulf7 namide (MeFOSA)	3o, 06-31-8	0.000,	mg/kg	<0.000,	0.003o1 mg/kg	90.3	50.0	o30
EP13oX: N-Ethyl per7luf rf f ctane sulf7 namide (EtFOSA)	4o, o-, 0-1	0.000,	mg/kg	<0.000,	0.003o1 mg/kg	55.9	50.0	o30
EP13oX: N-Methyl per7luf rf f ctane sulf7 namidf ethanf l (MeFOSE)	14448-09-5	0.000,	mg/kg	<0.000,	0.003o1 mg/kg	90.,	50.0	o30
EP13oX: N-Ethyl per7luf rf f ctane sulf7 namidf ethanf l (EtFOSE)	o69o-99-1	0.000,	mg/kg	<0.000,	0.003o1 mg/kg	93.6	50.0	o30
EP13oX: N-Methyl per7luf rf f ctane sulf7 namidf acetic acid (MeFOSAA)	13, , -3o-9	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	86.0	63.0	o44
EP13oX: N-Ethyl per7luf rf f ctane sulf7 namidf acetic acid (EtFOSAA)	199o-, 0-6	0.0001	mg/kg	<0.0001	0.00o1, mg/kg	86.6	6o.0	o39
EP23t D: (m2) Fluororelo1 er Sulfonic Acids (QCLon 434t 56t)								
EP13oX: 4:1 Fluf rf telf mer sulf7 nic acid (4:1 FTS)	5, 5o14-51-4	0.000,	mg/kg	<0.000,	0.00oo5 mg/kg	9o.1	61.0	o4,
EP13oX: 6:1 Fluf rf telf mer sulf7 nic acid (6:1 FTS)	156o9-95-1	0.000,	mg/kg	<0.000,	0.00oo9 mg/kg	89.o	64.0	o40
EP13oX: 8:1 Fluf rf telf mer sulf7 nic acid (8:1 FTS)	39o08-34-4	0.000,	mg/kg	<0.000,	0.00o1 mg/kg	o04	6, .0	o35

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP23t D: (m2) Fluororelo1 er Sulfonic Acids (QCLon 434t 56t) - conmued								
EP13oX: o0:1 Fluf rf telf mer sulf nic acid (o0:1 FTS)	o10116-60-0	0.000,	mg/kg	<0.000,	0.00o1o mg/kg	50.6	50.0	o30
EP23t P: PFAS Su1 s (QCLon 434t 56t)								
EP13oX: Sum f 7PFAS	----	0.0001	mg/kg	<0.0001	----	----	----	----
EP13oX: Sum f 7PFHxS and PFOS	3, , -46-4/o5 63-13-o	0.0001	mg/kg	<0.0001	----	----	----	----
EP13oX: Sum f 7PFAS (WA DER List)	----	0.0001	mg/kg	<0.0001	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP23t A: Perfluoroalkyl Sulfonic Acids (QCLon 434t 527)								
EP13oX: Per7uf rf butane sulf nic acid (PFBS)	35, -53-,	0.01	µg/L	<0.01	0.111 µg/L	o03	51.0	o30
EP13oX: Per7uf rf pentane sulf nic acid (PFPeS)	1506-9o-4	0.01	µg/L	<0.01	0.13, µg/L	oo1	5o.0	o15
EP13oX: Per7uf rf hexane sulf nic acid (PFHxS)	3, , -46-4	0.0o	µg/L	<0.0o	0.118 µg/L	oo0	68.0	o3o
EP13oX: Per7uf rf heptane sulf nic acid (PFHpS)	35, -91-8	0.01	µg/L	<0.01	0.1, µg/L	96.8	69.0	o34
EP13oX: Per7uf rf f ctane sulf nic acid (PFOS)	o563-13-o	0.0o	µg/L	<0.0o	0.131 µg/L	9, .o	6, .0	o40
EP13oX: Per7uf rf decane sulf nic acid (PFDS)	33, -55-3	0.01	µg/L	<0.01	0.14o µg/L	o00	, 3.0	o41
EP23t B: Perfluoroalkyl Carboxylic Acids (QCLon 434t 527)								
EP13oX: Per7uf rf butanf ic acid (PFBA)	35, -11-4	0.o	µg/L	<0.o	o.1, µg/L	9, .,	53.0	o19
EP13oX: Per7uf rf pentanf ic acid (PFPeA)	1506-90-3	0.01	µg/L	<0.01	0.1, µg/L	oo0	51.0	o19
EP13oX: Per7uf rf hexanf ic acid (PFHxA)	305-14-4	0.01	µg/L	<0.01	0.1, µg/L	84.1	51.0	o19
EP13oX: Per7uf rf heptanf ic acid (PFHpA)	35, -8, -9	0.01	µg/L	<0.01	0.1, µg/L	o01	51.0	o30
EP13oX: Per7uf rf f ctanf ic acid (PFOA)	33, -65-o	0.0o	µg/L	<0.0o	0.1, µg/L	o0o	5o.0	o33
EP13oX: Per7uf rf nf nanf ic acid (PFNA)	35, -9, -o	0.01	µg/L	<0.01	0.1, µg/L	o04	69.0	o30
EP13oX: Per7uf rf decanf ic acid (PFDA)	33, -56-1	0.01	µg/L	<0.01	0.1, µg/L	84.6	5o.0	o19
EP13oX: Per7uf rf undecanf ic acid (PFUnDA)	10, 8-94-8	0.01	µg/L	<0.01	0.1, µg/L	98.9	69.0	o33
EP13oX: Per7uf rf df decanf ic acid (PFDf DA)	305-, , -o	0.01	µg/L	<0.01	0.1, µg/L	o01	51.0	o34
EP13oX: Per7uf rf tridecanf ic acid (PFTrDA)	51619-94-8	0.01	µg/L	<0.01	0.1, µg/L	85.0	6, .0	o44
EP13oX: Per7uf rf tetradecanf ic acid (PFTeDA)	356-06-5	0.0,	µg/L	<0.0,	0.61, µg/L	o06	5o.0	o31
EP23t C: Perfluoroalkyl Sulfona1 ides (QCLon 434t 527)								
EP13oX: Per7uf rf f ctane sulf namide (FOSA)	5, 4-9o-6	0.01	µg/L	<0.01	0.1, µg/L	95.9	65.0	o35
EP13oX: N-Methyl per7uf rf f ctane sulf namide (MeFOSA)	3o, 06-31-8	0.0,	µg/L	<0.0,	0.61, µg/L	o04	68.0	o4o
EP13oX: N-Ethyl per7uf rf f ctane sulf namide (EtFOSA)	4o, o-, 0-1	0.0,	µg/L	<0.0,	0.61, µg/L	o0,	50.0	o30
EP13oX: N-Methyl per7uf rf f ctane sulf namidf ethanf l (MeFOSE)	14448-09-5	0.0,	µg/L	<0.0,	0.61, µg/L	o00	50.0	o30
EP13oX: N-Ethyl per7uf rf f ctane sulf namidf ethanf l (EtFOSE)	o69o-99-1	0.0,	µg/L	<0.0,	0.61, µg/L	99.0	50.0	o30
EP13oX: N-Methyl per7uf rf f ctane sulf namidf acetic acid (MeFOSAA)	13, , -3o-9	0.01	µg/L	<0.01	0.1, µg/L	o1o	6, .0	o36

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP23t C: Perfluoroalkyl Sulfona1 ides (QCLon 434t 527) - conmued								
EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf acetic acid (EtFOSAA)	199o-, 0-6	0.01	µg/L	<0.01	0.1, µg/L	o0o	6o.0	o3,
EP23t D: (m2) Fluororelo1 er Sulfonic Acids (QCLon 434t 527)								
EP13oX: 4:1 Fluf rf telf mer sul7f nic acid (4:1 FTS)	5, 5o14-51-4	0.0,	µg/L	<0.0,	0.134 µg/L	o04	63.0	o43
EP13oX: 6:1 Fluf rf telf mer sul7f nic acid (6:1 FTS)	156o9-95-1	0.0,	µg/L	<0.0,	0.138 µg/L	oo1	64.0	o40
EP13oX: 8:1 Fluf rf telf mer sul7f nic acid (8:1 FTS)	39o08-34-4	0.0,	µg/L	<0.0,	0.14 µg/L	o08	65.0	o38
EP13oX: o0:1 Fluf rf telf mer sul7f nic acid (o0:1 FTS)	o10116-60-0	0.0,	µg/L	<0.0,	0.141 µg/L	80.6	50.0	o30
EP23t P: PFAS Su1 s (QCLon 434t 527)								
EP13oX: Sum f 7PFAS	---	0.0o	µg/L	<0.0o	----	----	----	----
EP13oX: Sum f 7PFHxS and PFOS	3, , -46-4/o5 63-13-o	0.0o	µg/L	<0.0o	----	----	----	----
EP13oX: Sum f 7PFAS (WA DER List)	---	0.0o	µg/L	<0.0o	---	----	----	----

Matrix Spike (MS) Report

The quality cf ntrf l term Matrix Spike (MS) re7ers tf an intralabf ratf ry split sample spiked with a representative set f 7 target analytes. The purpf se f 7 this QC parameter is tf mf nitf r pf tential matrix e77ects f n analyte recf veries. Static Recf very Limits as per labf ratf ry Data Quality Objectives (DQOs). Ideal recf very ranges stated may be waived in the event f 7sample matrix inter7erence.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP23t A: Perfluoroalkyl Sulfonic Acids (QCLon 434t 56t)							
EM1108o11-004	Anf nymf us	EP13oX: Per7uf rf butane sul7f nic acid (PFBS)	35, -53-,	0.00ooo mg/kg	o16	51.0	o18
		EP13oX: Per7uf rf pentane sul7f nic acid (PFPeS)	1506-9o-4	0.00oo8 mg/kg	o13	53.0	o13
		EP13oX: Per7uf rf hexane sul7f nic acid (PFHxS)	3, , -46-4	0.00oo4 mg/kg	# Nf t Determined	65.0	o30
		EP13oX: Per7uf rf heptane sul7f nic acid (PFHpS)	35, -91-8	0.00oo9 mg/kg	o10	50.0	o31
		EP13oX: Per7uf rf f ctane sul7f nic acid (PFOS)	o563-13-o	0.00oo6 mg/kg	90.5	68.0	o36
		EP13oX: Per7uf rf decane sul7f nic acid (PFDS)	33, -55-3	0.00o1o mg/kg	# Nf t Determined	, 9.0	o34
EP23t B: Perfluoroalkyl Carboxylic Acids (QCLon 434t 56t)							
EM1108o11-004	Anf nymf us	EP13oX: Per7uf rf butanf ic acid (PFBA)	35, -11-4	0.0061, mg/kg	84.5	5o.0	o3,
		EP13oX: Per7uf rf pentanf ic acid (PFPeA)	1506-90-3	0.00o1, mg/kg	80.0	69.0	o31
		EP13oX: Per7uf rf hexanf ic acid (PFHxA)	305-14-4	0.00o1, mg/kg	90.,	50.0	o31
		EP13oX: Per7uf rf heptanf ic acid (PFHpA)	35, -8, -9	0.00o1, mg/kg	9, .5	5o.0	o3o
		EP13oX: Per7uf rf f ctanf ic acid (PFOA)	33, -65-o	0.00o1, mg/kg	9o.8	69.0	o33
		EP13oX: Per7uf rf nf nanf ic acid (PFNA)	35, -9, -o	0.00o1, mg/kg	9o.0	51.0	o19
		EP13oX: Per7uf rf decanf ic acid (PFDA)	33, -56-1	0.00o1, mg/kg	5, .6	69.0	o33
		EP13oX: Per7uf rf undecanf ic acid (PFUnDA)	10, 8-94-8	0.00o1, mg/kg	9o.8	64.0	o36

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP23t B: Perfluoroalkyl Carboxylic Acids (QCLon 434t 56t) - conmued							
EM1108o11-004	Anf nymf us	EP13oX: Per7uf rf df decanf ic acid (PFDf DA)	305-, , -o	0.00o1, mg/kg	85.,	69.0	o3,
		EP13oX: Per7uf rf tridecanf ic acid (PFTrDA)	51619-94-8	0.00o1, mg/kg	# , 3.1	66.0	o39
		EP13oX: Per7uf rf tetradecanf ic acid (PFTeDA)	356-06-5	0.003o1 mg/kg	o00	69.0	o33
EP23t C: Perfluoroalkyl Sulfoma1 ides (QCLon 434t 56t)							
EM1108o11-004	Anf nymf us	EP13oX: Per7uf rf f ctane sul7f namide (FOSA)	5, 4-9o-6	0.00o1, mg/kg	o09	65.0	o35
		EP13oX: N-Methyl per7uf rf f ctane sul7f namide (MeFOSA)	3o, 06-31-8	0.003o1 mg/kg	88.6	50.0	o30
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namide (EtFOSA)	4o, o-, 0-1	0.003o1 mg/kg	95.4	50.0	o30
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf ethanf l (MeFOSE)	14448-09-5	0.003o1 mg/kg	o0o	50.0	o30
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf ethanf l (EtFOSE)	o69o-99-1	0.003o1 mg/kg	94.4	50.0	o30
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf acetic acid (MeFOSAA)	13, , -3o-9	0.00o1, mg/kg	o00	63.0	o44
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf acetic acid (EtFOSAA)	199o-, 0-6	0.00o1, mg/kg	o00	6o.0	o39
EP23t D: (m2) Fluorotelo1 er Sulfonic Acids (QCLon 434t 56t)							
EM1108o11-004	Anf nymf us	EP13oX: 4:1 Fluf rf telf mer sul7f nic acid (4:1 FTS)	5, 5o14-51-4	0.00oo5 mg/kg	o00	61.0	o4,
		EP13oX: 6:1 Fluf rf telf mer sul7f nic acid (6:1 FTS)	156o9-95-1	0.00oo9 mg/kg	o05	64.0	o40
		EP13oX: 8:1 Fluf rf telf mer sul7f nic acid (8:1 FTS)	39o08-34-4	0.00o1 mg/kg	o06	6, .0	o35
		EP13oX: o0:1 Fluf rf telf mer sul7f nic acid (o0:1 FTS)	o10116-60-0	0.00o1o mg/kg	# Nf t Determined	50.0	o30

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP23t A: Perfluoroalkyl Sulfonic Acids (QCLon 434t 527)							
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: Per7uf rf butane sul7f nic acid (PFBS)	35, -53-,	0.111 µg/L	84.,	51.0	o30
		EP13oX: Per7uf rf pentane sul7f nic acid (PFPeS)	1506-9o-4	0.13, µg/L	8, .8	5o.0	o15
		EP13oX: Per7uf rf hexane sul7f nic acid (PFHxS)	3, , -46-4	0.118 µg/L	80.8	68.0	o3o
		EP13oX: Per7uf rf heptane sul7f nic acid (PFHpS)	35, -91-8	0.138 µg/L	94.1	69.0	o34
		EP13oX: Per7uf rf f ctane sul7f nic acid (PFOS)	o563-13-o	0.131 µg/L	9o.,	6, .0	o40
		EP13oX: Per7uf rf decane sul7f nic acid (PFDS)	33, -55-3	0.14o µg/L	80.,	, 3.0	o41
EP23t B: Perfluoroalkyl Carboxylic Acids (QCLon 434t 527)							
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: Per7uf rf butanf ic acid (PFBA)	35, -11-4	o.1, µg/L	9o.6	53.0	o19
		EP13oX: Per7uf rf pentanf ic acid (PFPeA)	1506-90-3	0.1, µg/L	98.6	51.0	o19
		EP13oX: Per7uf rf hexanf ic acid (PFHxA)	305-14-4	0.1, µg/L	51.0	51.0	o19
		EP13oX: Per7uf rf heptanf ic acid (PFHpA)	35, -8, -9	0.1, µg/L	93.4	51.0	o30
		EP13oX: Per7uf rf f ctanf ic acid (PFOA)	33, -65-o	0.1, µg/L	88.1	5o.0	o33

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP23t B: Perfluoroalkyl Carboxylic Acids (QCLon 434t 527) - conmued							
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: Per7uf rf nf nanf ic acid (PFNA)	35, -9, -o	0.1, µg/L	99.1	69.0	o30
		EP13oX: Per7uf rf decanf ic acid (PFDA)	33, -56-1	0.1, µg/L	56.0	5o.0	o19
		EP13oX: Per7uf rf undecanf ic acid (PFUnDA)	10, 8-94-8	0.1, µg/L	93.0	69.0	o33
		EP13oX: Per7uf rf df decanf ic acid (PFDf DA)	305-, , -o	0.1, µg/L	89.3	51.0	o34
		EP13oX: Per7uf rf tridecanf ic acid (PFTrDA)	51619-94-8	0.1, µg/L	58.0	6, .0	o44
		EP13oX: Per7uf rf tetradecanf ic acid (PFTeDA)	356-06-5	0.61, µg/L	o00	5o.0	o31
EP23t C: Perfluoroalkyl Sulfom1 ides (QCLon 434t 527)							
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: Per7uf rf f ctane sul7f namide (FOSA)	5, 4-9o-6	0.1, µg/L	9o.9	65.0	o35
		EP13oX: N-Methyl per7uf rf f ctane sul7f namide (MeFOSA)	3o, 06-31-8	0.61, µg/L	59.6	68.0	o4o
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namide (EtFOSA)	4o, o-, 0-1	0.61, µg/L	91.0	50.0	o30
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf ethanf l (MeFOSE)	14448-09-5	0.61, µg/L	85.,	50.0	o30
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf ethanf l (EtFOSE)	o69o-99-1	0.61, µg/L	9o.5	50.0	o30
		EP13oX: N-Methyl per7uf rf f ctane sul7f namidf acetic acid (MeFOSAA)	13, , -3o-9	0.1, µg/L	o04	6, .0	o36
		EP13oX: N-Ethyl per7uf rf f ctane sul7f namidf acetic acid (EtFOSAA)	199o-, 0-6	0.1, µg/L	9o.1	6o.0	o3,
EP23t D: (m2) Fluorome1o1 er Sulfomic Acids (QCLon 434t 527)							
EM1108381-004	044, _SW40o_110, 03 internal lab qc	EP13oX: 4:1 Fluf rf telf mer sul7f nic acid (4:1 FTS)	5, 5o14-51-4	0.134 µg/L	9o.5	63.0	o43
		EP13oX: 6:1 Fluf rf telf mer sul7f nic acid (6:1 FTS)	156o9-95-1	0.138 µg/L	9, .3	64.0	o40
		EP13oX: 8:1 Fluf rf telf mer sul7f nic acid (8:1 FTS)	39o08-34-4	0.14 µg/L	98.3	65.0	o38
		EP13oX: o0:1 Fluf rf telf mer sul7f nic acid (o0:1 FTS)	o10116-60-0	0.141 µg/L	50.1	50.0	o30

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2208382**	Page	: 1 of 4
Amendment	: **1**		
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
[redacted]	[redacted]	Teleh6one	: [redacted]
Prov\ect	: I SC_j 994_PFJ AGMP	Date Aamhles Neceive2	: j 0R May Rj dd
Aite	: Oan2iana Pj 1	Ssue Date	: j dR unR j dd
Aamhler	[redacted]	Qo) of samhles receive2	: 1j
Gr2er number	: R	Qo) of samhles analyse2	: 0

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Orief met6o2 summaries an2 references are also hrovi2e2 to assist in traceability)

Summary of Outliers

Outliers : Quality Control Samples

T6is rehort 6ig6lig6ts outliers flagge2 in t6e Wuality Control kWC&Nehort)

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Comhoun2 p rouh Qame	Laboratory Aamhle S\D	Client Aamhle S\D	Analyte	CJ A Qumber	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EPd81O: PerfluoroalUyl Carboxylic J ci2s	EMddj 51ddRRj 9	J nonymous	**Perfluorotridecanoic acid (PFTrDA)**	%d3d0R09R5	48)d 7	33)j R1807	**Recovery less than lower data quality objective**

Analysis Holding Time Compliance

S samhles are i2entifie2 below as 6aving been analyse2 or extracte2 outsi2e of recommen2e2 6ol2ing timesBt6is s6oul2 be taUen into consi2eration w6en interhreting results)

T6is rehort summarizes extraction / hreharation an2 analysis times an2 comhares eac6 wit6 J LA recommen2e2 6ol2ing times kreferencing YAEPJ AH 593B J Ph J B J A an2 QEPM& base2 on t6e samhle container hrovi2e2) Dates rehorte2 rehresent first 2ate of extraction or analysis an2 hreclu2e subsequent 2ilutions an2 reruns) J listing of breac6es kif any&is hrovi2e2 6erein)

h ol2ing time for leac6ate met6o2s ke)g) TCLP& vary accor2ing to t6e analytes rehorte2) J ssessment comhares t6e leac6 2ate wit6 t6e s6ortest analyte 6ol2ing time for t6e equivalent soil met6o2) T6ese are: organics 19 2aysBmercury d5 2ays , ot6er metals 15j 2ays) J recor2e2 breac6 2oes not guarantee a breac6 for all nonRvolatile harameters)

h ol2ing times for ***VOC in soils*** vary accor2ing to analytes of interest) I inyl C6lori2e an2 Atyrene 6ol2ing time is %2ays; ot6ers 19 2ays) J recor2e2 breac6 2oes not guarantee a breac6 for all I GC analytes an2 s6oul2 be verifie2 in case t6e rehorte2 breac6 is a false hositive or I inyl C6lori2e an2 Atyrene are not Uey analytes of interest/concern)

Matrix: **SOIL** Evaluation: × = h ol2ing time breac6 ; ✓ = H it6in 6ol2ing time)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
j 994_AD804_ddj 4j 8B j 994_AD803_ddj 4j 8	j 994_AD80%_ddj 4j 8B	**03-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	1%RMayRdj dd	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
j 994_AD804_ddj 4j 8B j 994_AD803_ddj 4j 8	j 994_AD80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**18-May-2022**	d3RunRdj dd	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
j 994_AD804_ddj 4j 8B j 994_AD803_ddj 4j 8	j 994_AD80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**18-May-2022**	d3RunRdj dd	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X)								
j 994_AD804_ddj 4j 8B j 994_AD803_ddj 4j 8	j 994_AD80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**18-May-2022**	d3RunRdj dd	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X)								
j 994_AD804_ddj 4j 8B j 994_AD803_ddj 4j 8	j 994_AD80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**18-May-2022**	d3RunRdj dd	✓
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X)								
j 994_AD804_ddj 4j 8B j 994_AD803_ddj 4j 8	j 994_AD80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**18-May-2022**	d3RunRdj dd	✓

Matrix: **WATER**

Evaluation: × = h ol2ing time breac6 ; ✓ = H it6in 6ol2ing time)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
j 994_AH 803_ddj 4j 8B	j 994_AH 80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**17-May-2022**	8j RGctRdj dd	✓
j 994_AH 9j j _ddj 4j 8B	j 994_AH 9j 1_ddj 4j 8 Rinternal lab qcB							
j 994_AH 9%l_ddj 4j 8 Rinternal lab qcB	j 994_AH 95%_ddj 4j 8							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
j 994_AH 803_ddj 4j 8B	j 994_AH 80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**17-May-2022**	8j RGctRdj dd	✓
j 994_AH 9j j _ddj 4j 8B	j 994_AH 9j 1_ddj 4j 8 Rinternal lab qcB							
j 994_AH 9%l_ddj 4j 8 Rinternal lab qcB	j 994_AH 95%_ddj 4j 8							
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
j 994_AH 803_ddj 4j 8B	j 994_AH 80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**17-May-2022**	8j RGctRdj dd	✓
j 994_AH 9j j _ddj 4j 8B	j 994_AH 9j 1_ddj 4j 8 Rinternal lab qcB							
j 994_AH 9%l_ddj 4j 8 Rinternal lab qcB	j 994_AH 95%_ddj 4j 8							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
j 994_AH 803_ddj 4j 8B	j 994_AH 80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**17-May-2022**	8j RGctRdj dd	✓
j 994_AH 9j j _ddj 4j 8B	j 994_AH 9j 1_ddj 4j 8 Rinternal lab qcB							
j 994_AH 9%l_ddj 4j 8 Rinternal lab qcB	j 994_AH 95%_ddj 4j 8							
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
j 994_AH 803_ddj 4j 8B	j 994_AH 80%_ddj 4j 8B	**03-May-2022**	**17-May-2022**	8j RGctRdj dd	✓	**17-May-2022**	8j RGctRdj dd	✓
j 994_AH 9j j _ddj 4j 8B	j 994_AH 9j 1_ddj 4j 8 Rinternal lab qcB							
j 994_AH 9%l_ddj 4j 8 Rinternal lab qcB	j 994_AH 95%_ddj 4j 8							

Quality Control Parameter Frequency Compliance

T6e following rehort summarises t6e frequency of laboratory WC samhles analyse2 wit6in t6e analytical lotks&in w6ic6 t6e submitte2 samhleks&waskwere&hrocesse2) J ctual rate s6oul2 be greater t6an or equal to t6e exhecte2 rate) J listing of breac6es is hrovi2e2 in t6e Aummary of Gutliers)

Matrix: **SOIL**

Evaluation: × = Wuality Control frequency not wit6in shecification ; ✓ = Wuality Control frequency wit6in shecification)

Wuality Control Aamhle Tyhe		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duhlicates kDYP&							
Moisture Content	EJj 44	d	19	**14.29**	**10.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	d	dj	**10.00**	**10.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2
Laboratory Control Aamhles kLCA&							
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	1	dj	**5.00**	**5.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2
Met6o2 OlanUs kMO&							
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	1	dj	**5.00**	**5.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2
Matrix AhiUes kMA&							
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	1	dj	**5.00**	**5.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2

Matrix: **WATER**

Evaluation: × = Wuality Control frequency not wit6in shecification ; ✓ = Wuality Control frequency wit6in shecification)

Wuality Control Aamhle Tyhe		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duhlicates kDYP&							
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	d	15	**11.11**	**10.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2
Laboratory Control Aamhles kLCA&							
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	1	15	**5.56**	**5.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2
Met6o2 OlanUs kMO&							
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	1	15	**5.56**	**5.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2
Matrix AhiUes kMA&							
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	1	15	**5.56**	**5.00**	✓	QEPM dj 18 O8 , J LA WC Atan2ar2

Brief Method Summaries

T6e analytical hroce2ures use2 by t6e Environmental Division 6ave been 2evelohe2 from establis6e2 internationally recognize2 hroce2ures suc6 as t6ose hublis6e2 by t6e YA EPJ BJ Ph J BJ A an2 QEPM) Sh 6ouse 2evelohe2 hroce2ures are emhloye2 in t6e absence of 2ocumente2 stan2ar2s or by client request) T6e following rehort hrovi2es brief 2escrihtions of t6e analytical hroce2ures emhloye2 for results rehorte2 in t6e Certificate of J nalysis) Aources from w6ic6 J LA met6o2s 6ave been 2evelohe2 are hrovi2e2 wit6in t6e Met6o2 Descrihtions)

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EJ i 44	AGSL	Sh 6ouse: J gravimetric hroce2ure base2 on weig6t loss over a 1d 6our 2rying herio2 at 1j 4R1j 2egrees C) T6is met6o2 is comhliant wit6 QEPM Ac6e2ule Ok88)
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	AGSL	ShR6ouse: J nalysis of soils by solvent extraction followe2 by LCRElectroshrayRMARMABQegative Mo2e using MNM using internal stan2ar2 quantitation) Sbotohically labelle2 analogues of target analytes use2 as internal stan2ar2s an2 surrogates are a22e2 to a hortion of soil w6ic6 is t6en extracte2 wit6 MTOE an2 an ion hairing reagent) J hortion of extract is exc6ange2 into t6e analytical solvent mixtureBcombine2 wit6 an equal volume reagent water an2 filtere2 for analysis) Met6o2 hroce2ures an2 2ata quality ob\ectives conform to YA DoD WAM 4)8Btable OR14 requirements)
PerRan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPd81X	H J TEN	ShR6ouse: J nalysis of fres6 an2 saline waters by Aoli2 P6ase Extraction kAPE&followe2 by LCRElectroshrayRMARMABQegative Mo2e using MNM an2 internal stan2ar2 quantitation) Sbotohically labelle2 analogues of target analytes use2 as internal stan2ar2s an2 surrogates are a22e2 to t6e samhle container) T6e entire contents are transferre2 to a soli2 h6ase extraction kAPE&cartri2ge) T6e samhle container is successively rinse2 wit6 aliquots of t6e elution solvent) T6e elute2 extract is combine2 wit6 an equal volume of reagent water an2 a hortion is filtere2 for analysis) Met6o2 hroce2ures an2 2ata quality ob\ectives conform to YA DoD WAM 4)8Btable OR14 requirements)

Preparation Methods	Method	Matrix	Method Descriptions
WuEC6eNA Extraction of Aoli2s	GNp %d	AGSL	Sh 6ouse: Aequential extractions wit6 J cetonitrile/Met6anol by s6aUing) Extraction efficiency ai2e2 by t6e a22ition of salts un2er aci2ic con2itions) H 6ere relevantBinterferences from coRextracte2 organics are remove2 wit6 2ishersive cleanRuh me2ia k2APE&) T6e extract is eit6er 2ilute2 or concentrate2 an2 exc6ange2 into t6e analytical solvent)
Aoli2 P6ase Extraction kAPE&for PFJ A in water	GNp %d	H J TEN	ShR6ouse: Sbotohically labelle2 analogues of target analytes use2 as internal stan2ar2s an2 surrogates are a22e2 to t6e samhle container) T6e entire contents are transferre2 to a soli2 h6ase extraction kAPE&cartri2ge) T6e samhle container is successively rinse2 wit6 aliquots of t6e elution solvent) T6e elute2 extract is combine2 wit6 an equal volume of reagent water an2 a hortion is filtere2 for analysis) Met6o2 hroce2ures conform to YA DoD WAM 4)8Btable OR14 requirements)

Samples received without CoC

CLIENT / SENDER:	Cardno / STANTEC
PROJECT:	AM 2021 CANBCON 00004
CONTACT NAME:	
CONTACT NUMBER:	
CARRIER:	Courier
CONNOTE REFERENCE:	
SAMPLER:	
NUMBER OF SAMPLES/MATRIX:	2 Bottles.
Client services notified by:	PFAS water

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	4	5	6	7
OF:	1	2	3	4	5	6	7

SAMPLES RECEIVED BY: [redacted]

DATE/TIME: 11/5, 13:11

ANALYSIS RECEIVED BY:

DATE/TIME:

Comments

Environmental Division
Melbourne
Work Order Reference
EM2208381

Telephone : +61-3-8549 9600

LAB ID	SAMPLE DETAILS: SAMPLE ID	DATE	MATRIX	NUMBER OF CONTAINERS	Additional Information
	SW 471	3/5			
	SW 382	3/5			
	QC 104	4/5			
	QC 101				
	etc				
			TOTAL		

CHAIN OF CUSTODY

ALS COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_MW009_220505		05/05/2022 09:32 AM	Water	ALS: 2 Non ALS: 0	No		X			
002	0445_MW012_220505		05/05/2022 08:13 AM	Water	ALS: 2 Non ALS: 0	No		X			
003	0445_MW018_220505		05/05/2022 09:33 AM	Water	ALS: 2 Non ALS: 0	No		X			
004	0445_MW020_220503		03/05/2022 03:38 PM	Water	ALS: 2 Non ALS: 0	No		X			
005	0445_MW029_220505		05/05/2022 08:47 AM	Water	ALS: 2 Non ALS: 0	No		X			
006	0445_MW034_220503		03/05/2022 04:05 PM	Water	ALS: 2 Non ALS: 0	No		X			
007	0445_MW035_220503		03/05/2022 10:24 AM	Water	ALS: 2 Non ALS: 0	No		X			
008	0445_MW042_220503		03/05/2022 03:20 PM	Water	ALS: 2 Non ALS: 0	No		X			
009	0445_MW043_220503		03/05/2022 03:22 PM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

(ALS) COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_MW046D_220503		03/05/2022 04:25 PM	Water	ALS: 2 Non ALS: 0	No		X			
011	0445_MW046I_220503		04/05/2022 07:42 AM	Water	ALS: 6 Non ALS: 0	No		X			
012	0445_MW052_220505		05/05/2022 08:22 AM	Water	ALS: 2 Non ALS: 0	No		X			
013	0445_MW345_220506		06/05/2022 09:54 AM	Water	ALS: 2 Non ALS: 0	No		X			
014	0445_MW346_220506		06/05/2022 08:37 AM	Water	ALS: 2 Non ALS: 0	No		X			
015	0445_MW350_D_220503		03/05/2022 04:17 PM	Water	ALS: 2 Non ALS: 0	No		X			
016	0445_MW350_S_220506		06/05/2022 12:38 PM	Water	ALS: 2 Non ALS: 0	No		X			
017	0445_MW351_220503	normal	03/05/2022 09:51 AM	Water	ALS: 2 Non ALS: 0	No		X			
018	0445_MW352_220503		03/05/2022 09:56 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
019	0445_MW353_220505		05/05/2022 10:12 AM	Water	ALS: 2 Non ALS: 0	No		X			
020	0445_MW354_220505		05/05/2022 08:38 AM	Water	ALS: 2 Non ALS: 0	No		X			
021	0445_MW361_220506		07/05/2022 08:54 AM	Water	ALS: 2 Non ALS: 0	No		X			
022	0445_MW403_220505		05/05/2022 04:18 PM	Water	ALS: 2 Non ALS: 0	No		X			
023	0445_MW404_220505		05/05/2022 04:08 PM	Water	ALS: 2 Non ALS: 0	No		X			
024	0445_SW321_220504		04/05/2022 09:36 AM	Water	ALS: 2 Non ALS: 0	No		X			
025	0445_SW322_220504		04/05/2022 01:21 PM	Water	ALS: 2 Non ALS: 0	No		X			
026	0445_SW323_220504	internal lab qc	04/05/2022 01:51 PM	Water	ALS: 6 Non ALS: 0	No		X			
027	0445_SW324_220504		04/05/2022 09:39 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

(ALS) COC#: 37045 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
028	0445_SW326_220504		04/05/2022 09:06 AM	Water	ALS: 2 Non ALS: 0	No		X			
029	0445_SW333_220504		04/05/2022 09:03 AM	Water	ALS: 2 Non ALS: 0	No		X			
030	0445_SW336_220504		04/05/2022 12:23 PM	Water	ALS: 2 Non ALS: 0	No		X			
031	0445_SW338_220504		04/05/2022 01:31 PM	Water	ALS: 2 Non ALS: 0	No		X			
032	0445_SW346_220504		04/05/2022 04:28 PM	Water	ALS: 2 Non ALS: 0	No		X			
033	0445_SW349_220504		04/05/2022 04:20 PM	Water	ALS: 2 Non ALS: 0	No		X			
034	0445_SW355_220504	internal lab qc	04/05/2022 04:57 PM	Water	ALS: 6 Non ALS: 0	No		X			
035	0445_SW370_220506		06/05/2022 09:54 AM	Water	ALS: 2 Non ALS: 0	No		X			
036	0445_SW374_220506		06/05/2022 09:53 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 37045 ALS Laboratory: EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
037	0445_SW375_220506	internal lab qc	06/05/2022 09:03 AM	Water	ALS: 6 Non ALS: 0	No		X			
038	0445_SW382_220503	internal lab qc	03/05/2022 09:59 AM	Water	ALS: 6 Non ALS: 0	No		X			
039	0445_SW387_220503		03/05/2022 11:33 AM	Water	ALS: 2 Non ALS: 0	No		X			
040	0445_SD323_220504_0.10 -0.15		04/05/2022 01:52 PM	Soil	ALS: 1 Non ALS: 0	No			X		
041	0445_SD346_220504		04/05/2022 04:28 PM	Soil	ALS: 1 Non ALS: 0	No			X		
042	0445_SD355_220504		07/05/2022 08:22 AM	Soil	ALS: 1 Non ALS: 0	No			X		
043	0445_SD375_220506_0.10 -0.20		06/05/2022 09:02 AM	Soil	ALS: 1 Non ALS: 0	No			X		
044	0445_SD382_220503_0.10		03/05/2022 09:52 AM	Soil	ALS: 1 Non ALS: 0	No			X		
045	0445_QC100_220503		03/05/2022 09:55 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 37045 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
046	0445_QC101_220503		03/05/2022 11:35 AM	Water	ALS: 2 Non ALS: 0	No		X			
047	0445_QC106_220503		03/05/2022 04:06 PM	Water	ALS: 2 Non ALS: 0	No		X			
048	0445_QC300_220503		04/05/2022 07:34 AM	Water	ALS: 2 Non ALS: 0	No		X			
049	0445_QC301_220503		04/05/2022 07:35 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
050	0445_MW312_220504		04/05/2022 01:05 PM	Water	ALS: 6 Non ALS: 0	No		X			
051	0445_SD323_220504_0.10-0.15		04/05/2022 01:53 PM	Soil	ALS: 1 Non ALS: 0	No			X		
052	0445_MW307_220504		04/05/2022 01:30 PM	Water	ALS: 2 Non ALS: 0	No		X			
053	0445_MW304_220504		04/05/2022 01:32 PM	Water	ALS: 2 Non ALS: 0	No		X			
054	0445_QC107_220504		04/05/2022 01:33 PM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

(ALS) COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal Intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
055	0445_QC302_220504		05/05/2022 07:36 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
056	0445_QC303_220504		05/05/2022 07:38 AM	Water	ALS: 2 Non ALS: 0	No		X			
057	0445_QC304_220505		06/05/2022 07:51 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
058	0445_QC305_220505		06/05/2022 07:52 AM	Water	ALS: 2 Non ALS: 0	No		X			
059	0445_MW342_220506		06/05/2022 10:44 AM	Water	ALS: 2 Non ALS: 0	No		X			
060	0445_QC111_220506		06/05/2022 10:45 AM	Water	ALS: 2 Non ALS: 0	No		X			
061	0445_QC306_220506		07/05/2022 09:18 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
062	0445_QC307_220506		07/05/2022 09:21 AM	Water	ALS: 2 Non ALS: 0	No		X			
063	0445_QC103_220504		07/05/2022 09:52 AM	Water	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

(ALS) COC#: 37045 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana On Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
064	0445_QC104_220504		07/05/2022 09:54 AM	Water	ALS: 2 Non ALS: 0	No		X			
065	0445_QC109_220504		07/05/2022 09:56 AM	Soil	ALS: 1 Non ALS: 0	No			X		
066	0445_QC500_220506		07/05/2022 10:10 AM	Water	ALS: 2 Non ALS: 0	Yes	-				
067	0445_QC501_220506		07/05/2022 10:11 AM	Water	ALS: 2 Non ALS: 0	Yes					

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2208381**	Page	: 1 of 33
Amendment	: **1**		
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 09-May-2022 15:11
Order number	: -	Date Analysis Commenced	: 13-May-2022
C-O-C number	: 37045	Issue Date	: 02-Jun-2022 10:26
Sampler	: [redacted]		
Site	: Bandiana On Base		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 67		
No. of samples analysed	: 60		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Laboratory Coordinator	[redacted]
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X: Samples (EM2208381) required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Samples EM2208381 required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- Amendment (02/06/2022): This report has been amended as a result of a request to change sample identification numbers (IDs) received from Abe Wright on 01/06/2022, for samples EM2208381 #40,43,44,51. All analysis results are as per the previous report.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW009_220505	0445_MW012_220505	0445_MW018_220505	0445_MW020_220503	0445_MW029_220505
			Sampling date / time	05-May-2022 09:32	05-May-2022 08:13	05-May-2022 09:33	03-May-2022 15:38	05-May-2022 08:47
Compound	CAS Number	LOR	Unit	EM2208381-001	EM2208381-002	EM2208381-003	EM2208381-004	EM2208381-005
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.99**	**0.02**	**0.06**	**0.13**	**0.18**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**1.11**	**0.03**	**0.05**	**0.15**	**0.14**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**6.19**	**0.45**	**0.33**	**1.48**	**0.64**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.37**	<0.02	<0.02	**0.07**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**3.50**	**0.09**	**0.33**	**1.29**	**0.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.2**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.40**	<0.02	<0.02	**0.05**	**0.22**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**1.32**	**0.03**	<0.02	**0.17**	**0.29**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.29**	<0.02	<0.02	**0.02**	**0.10**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.44**	<0.01	<0.01	**0.06**	**0.05**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW009_220505	0445_MW012_220505	0445_MW018_220505	0445_MW020_220503	0445_MW029_220505
				Sampling date / time	05-May-2022 09:32	05-May-2022 08:13	05-May-2022 09:33	03-May-2022 15:38	05-May-2022 08:47
Compound	CAS Number	LOR	Unit		EM2208381-001	EM2208381-002	EM2208381-003	EM2208381-004	EM2208381-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.08**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**14.9**	**0.62**	**0.77**	**3.42**	**2.26**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**9.69**	**0.54**	**0.66**	**2.77**	**1.28**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**13.4**	**0.59**	**0.72**	**3.20**	**2.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	**107**	**107**	**99.9**	**104**
13C8-PFOA	----	0.02	%		**96.0**	**91.6**	**95.8**	**94.9**	**93.0**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW034_220503	0445_MW035_220503	0445_MW046D_220503	0445_MW046I_220503	0445_MW052_220505
			Sampling date / time	03-May-2022 16:05	03-May-2022 10:24	03-May-2022 16:25	04-May-2022 07:42	05-May-2022 08:22
Compound	CAS Number	LOR	Unit	EM2208381-006	EM2208381-007	EM2208381-010	EM2208381-011	EM2208381-012
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.14**	**1.16**	**0.37**	**0.20**	**1.31**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.14**	**1.27**	**0.30**	**0.20**	**1.20**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**1.00**	**7.38**	**2.09**	**1.42**	**5.08**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.08**	**0.49**	**0.17**	**0.11**	**0.32**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**1.57**	**5.07**	**2.88**	**2.17**	**9.31**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	**0.2**	<0.1	<0.1	**0.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.06**	**0.48**	**0.14**	**0.08**	**0.50**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.16**	**1.62**	**0.41**	**0.24**	**2.14**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.04**	**0.35**	**0.09**	**0.06**	**0.61**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.06**	**0.59**	**0.16**	**0.10**	**0.63**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW034_220503	0445_MW035_220503	0445_MW046D_220503	0445_MW046I_220503	0445_MW052_220505
				Sampling date / time	03-May-2022 16:05	03-May-2022 10:24	03-May-2022 16:25	04-May-2022 07:42	05-May-2022 08:22
Compound	CAS Number	LOR	Unit		EM2208381-006	EM2208381-007	EM2208381-010	EM2208381-011	EM2208381-012
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.10**	**0.09**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**3.25**	**18.7**	**6.70**	**4.58**	**21.4**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.57**	**12.4**	**4.97**	**3.59**	**14.4**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**3.03**	**17.0**	**6.23**	**4.27**	**19.9**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**109**	**108**	**103**	**102**	**111**
13C8-PFOA	----	0.02	%		**97.3**	**96.1**	**96.0**	**94.7**	**94.1**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW345_220506	0445_MW346_220506	0445_MW350_S_220506	0445_MW351_220503 normal	0445_MW352_220503
			Sampling date / time	06-May-2022 09:54	06-May-2022 08:37	06-May-2022 12:38	03-May-2022 09:51	03-May-2022 09:56
Compound	CAS Number	LOR	Unit	EM2208381-013	EM2208381-014	EM2208381-016	EM2208381-017	EM2208381-018
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.04**	<0.02	**2.43**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	<0.02	**2.69**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.21**	<0.01	**25.6**	**0.01**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	**2.32**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.03**	<0.01	**17.8**	**0.01**	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	**0.8**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**1.71**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	**4.45**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	**1.33**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**2.67**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	**0.02**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW345_220506	0445_MW346_220506	0445_MW350_S_220506	0445_MW351_220503 normal	0445_MW352_220503
				Sampling date / time	06-May-2022 09:54	06-May-2022 08:37	06-May-2022 12:38	03-May-2022 09:51	03-May-2022 09:56
Compound	CAS Number	LOR	Unit		EM2208381-013	EM2208381-014	EM2208381-016	EM2208381-017	EM2208381-018
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**1.22**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.31**	<0.01	**63.0**	**0.02**	**0.01**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.24**	<0.01	**43.4**	**0.02**	**0.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.28**	<0.01	**58.0**	**0.02**	**0.01**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	**102**	**103**	**110**	**105**
13C8-PFOA	----	0.02	%		**93.5**	**98.6**	**94.6**	**93.6**	**94.3**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_220505	0445_MW354_220505	0445_MW361_220506	0445_MW403_220505	0445_MW404_220505
				Sampling date / time	05-May-2022 10:12	05-May-2022 08:38	07-May-2022 08:54	05-May-2022 16:18	05-May-2022 16:08
Compound	CAS Number	LOR	Unit		EM2208381-019	EM2208381-020	EM2208381-021	EM2208381-022	EM2208381-023
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	**0.02**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	**0.14**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	**0.07**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	<0.02	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.40**	**0.03**	----	**5.98**	**7.16**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.40**	<0.02	----	**7.17**	**9.16**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**2.83**	**0.10**	----	**46.0**	**45.2**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.21**	<0.02	----	**4.26**	**4.18**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.10**	**0.11**	----	**52.7**	**56.2**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	----	<0.10	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	**0.01**	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_220505	0445_MW354_220505	0445_MW361_220506	0445_MW403_220505	0445_MW404_220505
				Sampling date / time	05-May-2022 10:12	05-May-2022 08:38	07-May-2022 08:54	05-May-2022 16:18	05-May-2022 16:08
Compound	CAS Number	LOR	Unit		EM2208381-019	EM2208381-020	EM2208381-021	EM2208381-022	EM2208381-023
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	<0.05	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	**1.3**	**1.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.11**	<0.02	----	**2.40**	**2.63**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.37**	<0.02	----	**11.2**	**13.3**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.09**	<0.02	----	**1.66**	**2.80**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.18**	<0.01	----	**3.42**	**4.02**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	**0.06**	<0.04
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_220505	0445_MW354_220505	0445_MW361_220506	0445_MW403_220505	0445_MW404_220505
				Sampling date / time	05-May-2022 10:12	05-May-2022 08:38	07-May-2022 08:54	05-May-2022 16:18	05-May-2022 16:08
Compound	CAS Number	LOR	Unit		EM2208381-019	EM2208381-020	EM2208381-021	EM2208381-022	EM2208381-023
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	<0.09	<0.09
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	<0.04	<0.04
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	<0.05	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	**0.95**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	----	**0.24**	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_220505	0445_MW354_220505	0445_MW361_220506	0445_MW403_220505	0445_MW404_220505
				Sampling date / time	05-May-2022 10:12	05-May-2022 08:38	07-May-2022 08:54	05-May-2022 16:18	05-May-2022 16:08
Compound	CAS Number	LOR	Unit		EM2208381-019	EM2208381-020	EM2208381-021	EM2208381-022	EM2208381-023
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	----	0.21	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	----	0.24	----	----
Sum of PFAS	----	0.01	µg/L		7.69	0.24	----	137	146
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		5.93	0.21	----	98.7	101
Sum of PFAS (WA DER List)	----	0.01	µg/L		7.08	0.24	----	126	132
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		105	110	----	94.5	107
13C4-PFOS	----	0.02	%		----	----	105	----	----
13C8-PFOA	----	0.02	%		96.3	93.2	----	100	97.7
13C8-PFOA	----	0.02	%		----	----	99.2	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_QC100_220503	0445_QC106_220503	0445_MW312_220504	0445_MW307_220504	0445_MW304_220504
			Sampling date / time	03-May-2022 09:55	03-May-2022 16:06	04-May-2022 13:05	04-May-2022 13:30	04-May-2022 13:32
Compound	CAS Number	LOR	Unit	EM2208381-045	EM2208381-047	EM2208381-050	EM2208381-052	EM2208381-053
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.13**	<0.02	**119**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.14**	<0.02	**115**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.01**	**1.08**	**0.10**	**555**	**0.09**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.07**	<0.02	**55.6**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.01**	**1.27**	<0.01	**88.8**	**0.06**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	**16.1**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	**0.05**	<0.02	**72.7**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.16**	<0.02	**221**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.03**	<0.02	**35.5**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	**0.06**	<0.01	**49.4**	<0.02
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	**0.62**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.09	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.09	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.09	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_QC100_220503	0445_QC106_220503	0445_MW312_220504	0445_MW307_220504	0445_MW304_220504
				Sampling date / time	03-May-2022 09:55	03-May-2022 16:06	04-May-2022 13:05	04-May-2022 13:30	04-May-2022 13:32
Compound	CAS Number	LOR	Unit		EM2208381-045	EM2208381-047	EM2208381-050	EM2208381-052	EM2208381-053
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	**1.10**	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**116**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.02**	**2.99**	**0.10**	**1440**	**0.15**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	**2.35**	**0.10**	**644**	**0.15**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	**2.78**	**0.10**	**1270**	**0.15**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.2**	**89.1**	**110**	**92.4**	**99.6**
13C8-PFOA	----	0.02	%		**94.4**	**95.5**	**97.9**	**112**	**105**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_QC107_220504	0445_MW342_220506	0445_QC111_220506	----	----
			Sampling date / time	04-May-2022 13:33	06-May-2022 10:44	06-May-2022 10:45	----	----
Compound	CAS Number	LOR	Unit	EM2208381-054	EM2208381-059	EM2208381-060	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.68**	**0.74**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.51**	**0.53**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.05**	**4.59**	**4.61**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.26**	**0.26**	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.07**	**4.00**	**3.97**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	**0.22**	**0.22**	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.81**	**0.75**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.07**	**0.08**	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.02	**0.16**	**0.17**	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_QC107_220504	0445_MW342_220506	0445_QC111_220506	----	----
				Sampling date / time	04-May-2022 13:33	06-May-2022 10:44	06-May-2022 10:45	----	----
Compound	CAS Number	LOR	Unit		EM2208381-054	EM2208381-059	EM2208381-060	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.12**	**11.3**	**11.3**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.12**	**8.59**	**8.58**	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.12**	**10.5**	**10.5**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.4**	**107**	**119**	----	----
13C8-PFOA	----	0.02	%		**101**	**99.8**	**96.5**	----	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)			Sample ID	0445_QC300_220503	0445_QC303_220504	0445_QC305_220505	0445_QC307_220506	----
			Sampling date / time	04-May-2022 07:34	05-May-2022 07:38	06-May-2022 07:52	07-May-2022 09:21	----
Compound	CAS Number	LOR	Unit	EM2208381-048	EM2208381-056	EM2208381-058	EM2208381-062	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)			Sample ID	0445_QC300_220503	0445_QC303_220504	0445_QC305_220505	0445_QC307_220506	----
			Sampling date / time	04-May-2022 07:34	05-May-2022 07:38	06-May-2022 07:52	07-May-2022 09:21	----
Compound	CAS Number	LOR	Unit	EM2208381-048	EM2208381-056	EM2208381-058	EM2208381-062	--------
				Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**106**	**102**	**103**	**100**	----
13C8-PFOA	----	0.02	%	**92.0**	**96.1**	**96.3**	**97.7**	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0445_SD323_220504	0445_SD346_220504	0445_SD355_220504	0445_SD375_220506	0445_SD382_220503
			Sampling date / time	04-May-2022 13:52	04-May-2022 16:28	07-May-2022 08:22	06-May-2022 09:02	03-May-2022 09:52
Compound	CAS Number	LOR	Unit	EM2208381-040	EM2208381-041	EM2208381-042	EM2208381-043	EM2208381-044
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**43.8**	**24.2**	**21.8**	**6.7**	**30.9**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0006**	**0.0002**	<0.0002	**0.0002**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0167**	**0.0039**	**0.0010**	**0.0042**	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0004**	**0.0002**	<0.0002	**0.0005**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0004**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0445_SD323_220504	0445_SD346_220504	0445_SD355_220504	0445_SD375_220506	0445_SD382_220503
				Sampling date / time	04-May-2022 13:52	04-May-2022 16:28	07-May-2022 08:22	06-May-2022 09:02	03-May-2022 09:52
Compound	CAS Number	LOR	Unit		EM2208381-040	EM2208381-041	EM2208381-042	EM2208381-043	EM2208381-044
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0184**	**0.0043**	**0.0010**	**0.0049**	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0173**	**0.0041**	**0.0010**	**0.0044**	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0173**	**0.0041**	**0.0010**	**0.0044**	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**93.1**	**109**	**91.4**	**70.5**	**89.3**
13C8-PFOA	----	0.0002	%		**92.2**	**112**	**99.8**	**69.0**	**105**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0445_QC109_220504	----	----	----	----
			Sampling date / time	07-May-2022 09:56	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2208381-065	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**45.9**	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0006**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0152**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0004**	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0002**	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0005**	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	**0.0002**	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0445_QC109_220504	----	----	----	----
				Sampling date / time	07-May-2022 09:56	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208381-065	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0171**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0158**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0158**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**88.2**	----	----	----	----
13C8-PFOA	----	0.0002	%		**97.2**	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_MW042_220503	0445_MW043_220503	0445_MW350_D_220503	0445_SW321_220504	0445_SW322_220504
			Sampling date / time	03-May-2022 15:20	03-May-2022 15:22	03-May-2022 16:17	04-May-2022 09:36	04-May-2022 13:21
Compound	CAS Number	LOR	Unit	EM2208381-008	EM2208381-009	EM2208381-015	EM2208381-024	EM2208381-025
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**1.42**	**1.52**	**0.10**	**0.05**	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**1.57**	**1.63**	**0.04**	**0.05**	**0.06**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**9.35**	**9.65**	**0.25**	**0.96**	**1.04**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.56**	**0.59**	**0.02**	**0.10**	**0.11**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**6.03**	**6.91**	**0.28**	**6.13**	**6.97**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.3**	**0.3**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.59**	**0.64**	<0.02	**0.02**	**0.02**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**2.02**	**2.04**	**0.04**	**0.11**	**0.12**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.43**	**0.44**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.66**	**0.70**	**0.02**	**0.05**	**0.06**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_MW042_220503	0445_MW043_220503	0445_MW350_D_220503	0445_SW321_220504	0445_SW322_220504
				Sampling date / time	03-May-2022 15:20	03-May-2022 15:22	03-May-2022 16:17	04-May-2022 09:36	04-May-2022 13:21
Compound	CAS Number	LOR	Unit		EM2208381-008	EM2208381-009	EM2208381-015	EM2208381-024	EM2208381-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.18**	**0.24**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**23.1**	**24.7**	**0.75**	**7.47**	**8.42**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**15.4**	**16.6**	**0.53**	**7.09**	**8.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**21.0**	**22.4**	**0.69**	**7.32**	**8.25**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**106**	**98.4**	**102**	**103**
13C8-PFOA	----	0.02	%		**91.7**	**93.1**	**94.1**	**93.3**	**96.9**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW323_220504 internal lab qc	0445_SW324_220504	0445_SW326_220504	0445_SW333_220504	0445_SW336_220504
			Sampling date / time	04-May-2022 13:51	04-May-2022 09:39	04-May-2022 09:06	04-May-2022 09:03	04-May-2022 12:23
Compound	CAS Number	LOR	Unit	EM2208381-026	EM2208381-027	EM2208381-028	EM2208381-029	EM2208381-030
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	**0.14**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.11**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.20**	**0.24**	**0.09**	**0.02**	**0.54**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.65**	**0.96**	**0.60**	**0.11**	**7.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.96**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.03**	**0.04**	**0.04**	<0.02	**0.44**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.04**	**0.04**	**0.02**	<0.02	**0.95**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	**0.25**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	**0.03**	**0.01**	<0.01	**0.35**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.16**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.14**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.23**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.24**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.08**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.09
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.11**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.09
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.09

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW323_220504 internal lab qc	0445_SW324_220504	0445_SW326_220504	0445_SW333_220504	0445_SW336_220504
				Sampling date / time	04-May-2022 13:51	04-May-2022 09:39	04-May-2022 09:06	04-May-2022 09:03	04-May-2022 12:23
Compound	CAS Number	LOR	Unit		EM2208381-026	EM2208381-027	EM2208381-028	EM2208381-029	EM2208381-030
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.09
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.09
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.04
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.04
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.90**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**1.44**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**1.19**
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.97**	**1.33**	**0.76**	**0.13**	**15.9**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.85**	**1.20**	**0.69**	**0.13**	**8.18**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.97**	**1.33**	**0.76**	**0.13**	**12.6**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.4**	**99.2**	**105**	**97.2**	**82.0**
13C8-PFOA	----	0.02	%		**91.1**	**91.2**	**96.5**	**94.3**	**77.8**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW338_220504	0445_SW346_220504	0445_SW349_220504	0445_SW355_220504 internal lab qc	0445_SW370_220506
			Sampling date / time	04-May-2022 13:31	04-May-2022 16:28	04-May-2022 16:20	04-May-2022 16:57	06-May-2022 09:54
Compound	CAS Number	LOR	Unit	EM2208381-031	EM2208381-032	EM2208381-033	EM2208381-034	EM2208381-035
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.03**	**0.04**	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.24**	**0.17**	**0.13**	**0.02**	**0.03**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.76**	**0.69**	**0.48**	**0.11**	**0.10**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.04**	**0.04**	**0.04**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.11**	**0.05**	**0.04**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.04**	**0.04**	**0.02**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW338_220504	0445_SW346_220504	0445_SW349_220504	0445_SW355_220504 internal lab qc	0445_SW370_220506
				Sampling date / time	04-May-2022 13:31	04-May-2022 16:28	04-May-2022 16:20	04-May-2022 16:57	06-May-2022 09:54
Compound	CAS Number	LOR	Unit		EM2208381-031	EM2208381-032	EM2208381-033	EM2208381-034	EM2208381-035
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.25**	**1.05**	**0.74**	**0.13**	**0.13**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.00**	**0.86**	**0.61**	**0.13**	**0.13**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.22**	**1.05**	**0.74**	**0.13**	**0.13**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.0**	**95.2**	**100**	**98.0**	**101**
13C8-PFOA	----	0.02	%		**92.1**	**90.2**	**95.8**	**89.7**	**96.6**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW374_220506	0445_SW375_220506 internal lab qc	0445_SW382_220503 internal lab qc	0445_SW387_220503	0445_QC101_220503
			Sampling date / time	06-May-2022 09:53	06-May-2022 09:03	03-May-2022 09:59	03-May-2022 11:33	03-May-2022 11:35
Compound	CAS Number	LOR	Unit	EM2208381-036	EM2208381-037	EM2208381-038	EM2208381-039	EM2208381-046
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.02**	**0.02**	<0.01	**0.05**	**0.08**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.05**	**0.06**	<0.01	**0.05**	**0.04**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW374_220506	0445_SW375_220506 internal lab qc	0445_SW382_220503 internal lab qc	0445_SW387_220503	0445_QC101_220503
				Sampling date / time	06-May-2022 09:53	06-May-2022 09:03	03-May-2022 09:59	03-May-2022 11:33	03-May-2022 11:35
Compound	CAS Number	LOR	Unit		EM2208381-036	EM2208381-037	EM2208381-038	EM2208381-039	EM2208381-046
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.07**	**0.08**	<0.01	**0.10**	**0.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	**0.08**	<0.01	**0.10**	**0.12**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.07**	**0.08**	<0.01	**0.10**	**0.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**99.6**	**108**	**95.9**	**92.5**
13C8-PFOA	----	0.02	%		**96.2**	**96.0**	**93.1**	**95.2**	**96.2**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_QC103_220504	0445_QC104_220504	----	----	----
			Sampling date / time	07-May-2022 09:52	07-May-2022 09:54	----	----	----
Compound	CAS Number	LOR	Unit	EM2208381-063	EM2208381-064	--------	--------	--------
				Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.02**	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.15**	**0.05**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.46**	**0.19**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.04**	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.04**	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	**0.01**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_QC103_220504	0445_QC104_220504	----	----	----
				Sampling date / time	07-May-2022 09:52	07-May-2022 09:54	----	----	----
Compound	CAS Number	LOR	Unit		EM2208381-063	EM2208381-064	-------	-------	-------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.73**	**0.25**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.61**	**0.24**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.73**	**0.25**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.4**	**107**	----	----	----
13C8-PFOA	----	0.02	%		**98.1**	**98.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: GROUNDWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: RINSATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: SURFACE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2208381**	Page	: o f 7oL
Amendment	: **1**		
i lreEy	: **DONT NOT USE - LOG UNDER MWHAUS**	bat f rayf rC	: v Emmf ED eEyal Mmmsnf E c elt f urEe
i f EyaAy	: [redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BVVress	: [redacted]
[redacted]	[redacted]	Teleh- f Ee	[redacted]
Prf jeAy	: 2G _0pp5_PFBNUc P	Maye NaDhles l eAemeV	: 0L-c aC-1011
UrVer EuDt er	: -	Maye BEalOsns i f DDeEAeV	: o4-c aC-1011
i -U-i EuDt er	: 4O0p5	Gsue Maye	: 01-kuE-1011
NaDhler	[redacted]		
Nnye	: WaEVmaEa UE Wase		
Quf ye EuDt er	: NY/o4L/oL_WaEVmaEa		
3f . f 7saDhles reAemeV	: 8O		
3f . f 7saDhles aEalOseV	: 80		

T- ns rehf ry suherseVes aEC hremmf us rehf ry(s) wny- y- ns re7ereEAe. l esulys ahhlC yf y- e saDhle(s) as sut DnyeV, uEless y- e saDhlnEg was Af EVuAyeV t C BbN. T- ns Vf AuDeEy s- all Ef y t e rehrf VuAeV, exAehynE 7ull.

T- ns QualnyCi f Eyrf l l ehf ry Af EyanEs y- e 7f llf wnEg nE7f rDayf E:

- bat f rayf rCMuhlnAaye (MKP) l ehf ry; l elaynne PerAeEyage Mn7ereEAe (l PM) aEV BAAehyaEAe bnDns
- c ey- f V WaEd (c W) aEV bat f rayf rCi f Eyrf l Nhnde (bi N) l ehf ry; l eAf nerCaEV BAAehyaEAe bnDns
- c aynx Nhnde (c N) l ehf ry; l eAf nerCaEV BAAehyaEAe bnDns

Signatories

T- ns Vf AuDeEy- as t eeE eleAyrf EnAallCsngEeV t Cy- e auy- f nzeV sngEayf rnes t elf w. v leAyrf EnAsngEnEg ns AarneV f uynE Af DhlnaEAe wny- hrf AeVures sheAn7eV nE 1o i Fl Paryoo.

Signatories	*Position*	*Accreditation Category*
[redacted]	bat f rayf rCi f f rVnEayf r NeEnf r UrgaEnAi - eDnsy	[redacted]

General Comments

T-e aEalOyAal hrf AeVures useV t C BbN - ame t eeE VemelfheV 7ff D esyat lns-eV nEyerEayfiEallC reAfgErseV hrf AeVures suA- as y-f se hut lns-eV t C y-e KNv PB, BPHB, BN aEV 3vPc . GE - f use VemelfheV hrf AeVures are 7ullCmalnVayeV aEV are f 7yeE ayy-e AlneEyrequesy.

R-ere Df nsyure VeyerDrnEayfiE-as t eeE her7frDeV, resulys are rehf nyeV f E a VrCweng-yt asns.

R-ere a rehf nyeV less y-aE (<) resuly ns -ng-er y-aE y-e bUI , y-ns DaC t e Vue yf hrnDarC saDhle exyraAy/Vngesyaye Vnluyfi E aEV/f r nEsu7ffAneEy saDhle 7f r aEalOsns. R-ere y-e bUI f 7 a rehf nyeV resuly Vn7ers 7ff D syaEVarV bUI , y-ns DaCt e Vue yf -ng- Df nsyure Af EyeEy, nEsu7ffAneEysaDhle (reVuAeV weng-yeDhlf CeV) f r Dayrnx nEyer7ereEAe.

SeC: BEf ECDf us = I e7ers yf saDhles w-nA- are Ef ysheAn7fAallCharyf 7y-ns wf rd f rVer t uy7f rDeV haryf 7y-e Qi hrf Aess If y
i BN 3uDt er = i BN regnsyrCEuDt er 7ff D Vayat ase DarEyarEeV t Ci -eDnAal Bt syraAys NernnAes. T-e i -eDnAal Bt syraAys NernnAe ns a Vnnsnf i E f 7y-e BDennAaE i -eDnAal Nf AneyC.
bUI = bnDnyf 7rehf nyEg
I PM = I elayrne PerAeEyage Mn7ereEAe
= GEVnAayes 7arneV Qi

Laboratory Duplicate (DUP) Report

T-e qualnyC Af Eyf I yerD bat f rayf rC MuhlnAaye re7ers yf a raEVf DIC seleAyeV nEyralat f rayf rC shlny bat f rayf rC VuhlnAayes hrf nnVe nE7frDayfiE regarVfEg Dey-f V hreArsnf E aEV saDhle -eyerf geEenyC. T-e herDnyyeV raEges 7f r y-e I elayrne PerAeEy Memnayf iE (I PM) f 7 bat f rayf rC MuhlnAayes are sheAn7feV nE BbN c ey-f V QR Gv 3/49 aEV are VeheEVeEy f E y-e DagEnyuVe f 7 resulys nE Af Dharnsf E yf y-e lemel f 7 rehf nyEg: I esuly < o0 yDes bUI : 3f bnDny, I esulyt eyweeE o0 aEV 10 yDes bUI : 0% - 50%; I esuly> 10 yDes bUI : 0% - 10%.

Nut -c aynx: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4343369)									
v c 110949o-0p0	0pp5_NM414_11050p	v B055: c f nsyure i f EyeEy	----	0.o	%	p4.9	p5.1	4.1	0% - 10%
v c 1109494-011	BEf ECDf us	v B055: c f nsyure i f EyeEy	----	0.o	%	4p.9	4p.5	o.0	0% - 10%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: Per7uf rf t uyaEe sul7f EnAaAnV (PFWN)	4O5-O4-5	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf heEyaEe sul7f EnAaAnV (PFPeN)	1O08-Lo-p	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEe sul7f EnAaAnV (PFHxN)	455-p8-p	0.0001	Dg/dg	0.0008	0.0005	44.1	3f bnDny
		v P14oX: Per7uf rf - ehyaEe sul7f EnAaAnV (PFHhN)	4O5-L1-9	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf f AyaEe sul7f EnAaAnV (PFUN)	oO84-14-o	0.0001	Dg/dg	0.0o8O	0.0oOp	p.1	0% - 10%
		v P14oX: Per7uf rf VeAaEe sul7f EnAaAnV (PFMN)	445-OO-4	0.0001	Dg/dg	0.000p	0.000p	0.0	3f bnDny
v c 1109984-01o	BEf ECDf us	v P14oX: Per7uf rf t uyaEe sul7f EnAaAnV (PFWN)	4O5-O4-5	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf heEyaEe sul7f EnAaAnV (PFPeN)	1O08-Lo-p	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEe sul7f EnAaAnV (PFHxN)	455-p8-p	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - ehyaEe sul7f EnAaAnV (PFHhN)	4O5-L1-9	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf f AyaEe sul7f EnAaAnV (PFUN)	oO84-14-o	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf VeAaEe sul7f EnAaAnV (PFMN)	445-OO-4	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: Per7uf rf heEyaEf nAaAnV (PFPeB)	1O08-L0-4	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEf nAaAnV (PFHxB)	40O-1p-p	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf - ehyaEf nAaAnV (PFHhB)	4O5-95-L	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf f AyaEf nAaAnV (PFUB)	445-8O-o	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf Ef EaEf nAaAnV (PF3B)	4O5-L5-o	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf VeAaEf nAaAnV (PFMB)	445-O8-1	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny
		v P14oX: Per7uf rf uEVeAaEf nAaAnV (PFKEMB)	1059-Lp-9	0.0001	Dg/dg	0.0004	0.0004	0.0	3f bnDny
		v P14oX: Per7uf rf Vf VeAaEf nAaAnV (PFMf MB)	40O-55-o	0.0001	Dg/dg	<0.0001	<0.0001	0.0	3f bnDny

Nut -c aynx: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4341555) - continued									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: Per7uf rf ynVeAaEf nAaAnV (PFTrMB)	O181L-Lp-9	0.0001	D g/dg	0.000p	0.0008	1L.8	3 f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nAaAnV (PFTeMB)	4O8-08-O	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: Per7uf rf t uyaEf nAaAnV (PFWB)	4O5-11-p	0.00o	D g/dg	<0.00o	<0.00o	0.0	3 f bnDny
v c 1109984-01o	BEf ECDf us	v P14oX: Per7uf rf heEyaEf nAaAnV (PFPeB)	1O08-L0-4	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf - exaEf nAaAnV (PFHxB)	40O-1p-p	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf - ehyaEf nAaAnV (PFHhB)	4O5-95-L	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf f AyaEf nAaAnV (PFUB)	445-8O-o	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf Ef EaEf nAaAnV (PF3 B)	4O5-L5-o	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf VeAaEf nAaAnV (PFMB)	445-O8-1	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf uEVeAaEf nAaAnV (PFKEMB)	1059-Lp-9	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf Vf VeAaEf nAaAnV (PFMf MB)	40O-55-o	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf ynVeAaEf nAaAnV (PFTrMB)	O181L-Lp-9	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nAaAnV (PFTeMB)	4O8-08-O	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: Per7uf rf t uyaEf nAaAnV (PFWB)	4O5-11-p	0.00o	D g/dg	<0.00o	<0.00o	0.0	3 f bnDny
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf aAeynAaAnV (c eFUNBB)	1455-4o-L	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf aAeynAaAnV (v yFUNBB)	1LLo-50-8	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
v c 1109984-01o	BEf ECDf us	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf aAeynAaAnV (c eFUNBB)	1455-4o-L	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf aAeynAaAnV (v yFUNBB)	1LLo-50-8	0.0001	D g/dg	<0.0001	<0.0001	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3 f bnDny

Nut -c aynx: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: p:1 Fluf rf yelf D er sulf7f EnA aAnV (p:1 FTN)	C5Co1p-O1-p	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: 8:1 Fluf rf yelf D er sulf7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: 9:1 Fluf rf yelf D er sulf7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: o0:1 Fluf rf yelf D er sulf7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
v c 1109984-01o	BEf ECD f us	v P14oX: p:1 Fluf rf yelf D er sulf7f EnA aAnV (p:1 FTN)	C5Co1p-O1-p	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: 8:1 Fluf rf yelf D er sulf7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: 9:1 Fluf rf yelf D er sulf7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
		v P14oX: o0:1 Fluf rf yelf D er sulf7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.0005	D g/dg	<0.0005	<0.0005	0.0	3f bnD ry
EP231P: PFAS Sums (QC Lot: 4341555)									
v c 110949o-0p0	0pp5_NM414_11050p	v P14oX: NuD f 7PFBN	----	0.0001	D g/dg	0.0o9p	0.0oL1	p.4	0% - 10%
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0001	D g/dg	0.0oO4	0.0oCL	4.p	0% - 10%
		v P14oX: NuD f 7PFBN (R B MvI bnsy)	----	0.0001	D g/dg	0.0oO4	0.0oCL	4.p	0% - 10%
v c 1109984-01o	BEf ECD f us	v P14oX: NuD f 7PFBN	----	0.0001	D g/dg	<0.0001	<0.0001	0.0	3f bnD ry
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0001	D g/dg	<0.0001	<0.0001	0.0	3f bnD ry
		v P14oX: NuD f 7PFBN (R B MvI bnsy)	----	0.0001	D g/dg	<0.0001	<0.0001	0.0	3f bnD ry

Nut -c aynx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: Per7uf rf - exaEe sulf7f EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	o.p1	o.p5	1.0	0% - 10%
		v P14oX: Per7uf rf f AyaEe sulf7f EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	1.oO	1.oL	0.L	0% - 10%
		v P14oX: Per7uf rf t uyaEe sulf7f EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	0.10	0.oL	0.0	3f bnD ry
		v P14oX: Per7uf rf heEyaEe sulf7f EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	0.10	0.1o	0.0	0% - 50%
		v P14oX: Per7uf rf - ehyaEe sulf7f EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	0.oo	0.o1	0.0	3f bnD ry
		v P14oX: Per7uf rf VeAaEe sulf7f EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnD ry
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf - exaEe sulf7f EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	0.10	0.o9	9.4	0% - 50%
		v P14oX: Per7uf rf f AyaEe sulf7f EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	0.85	0.59	oo.p	0% - 10%
		v P14oX: Per7uf rf t uyaEe sulf7f EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	0.04	0.0p	0.0	3f bnD ry
		v P14oX: Per7uf rf heEyaEe sulf7f EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnD ry

Nut -c ayrnx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4340647) - continued									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: Per7uf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	0.01	0.01	0.0	3f bnDry
		v P14oX: Per7uf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.0o	µg/b	0.08	0.05	0.0	3f bnDry
		v P14oX: Per7uf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: Per7uf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDry
		v P14oX: Per7uf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDry
		v P14oX: Per7uf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	0.o0	0.o0	0.0	3f bnDry
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	0.09	0.0L	0.0	3f bnDry
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	0.1p	0.15	0.0	0% - 50%
		v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	0.08	0.05	0.0	3f bnDry
		v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	<0.o	0.0	3f bnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	0.01	0.01	0.0	3f bnDry
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	0.04	0.04	0.0	3f bnDry
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	0.0p	0.0p	0.0	3f bnDry
		v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry

Nut -c aynx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340647) - continued									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
		v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	<0.o	0.0	3f bnDny
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
		v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	<0.o	0.0	3f bnDny
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
		v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	<0.o	0.0	3f bnDny
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: Per7uf rf f AyaEe sul7f EaDnVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDny
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4339776) - continued									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: Per7uf rf f AyaEe sul7f EaD nVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: Per7uf rf f AyaEe sul7f EaD nVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: Per7uf rf f AyaEe sul7f EaD nVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaD nVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	<0.01	0.0	3f bnDry

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340663) - continued									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	O5Oo1p-O1-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1O8oL-LO-1	0.05	µg/b	<0.05	0.05	0.0	3f bnDry
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	O5Oo1p-O1-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1O8oL-LO-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	O5Oo1p-O1-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1O8oL-LO-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	O5Oo1p-O1-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1O8oL-LO-1	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	<0.05	0.0	3f bnDry

Nut -c ayrnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340663) - continued									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	<0.05	0.0	3f bnDny
EP231P: PFAS Sums (QC Lot: 4339776)									
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: NuD f 7PFBN	----	0.0o	µg/b	p.59	p.C0	1.8	0% - 10%
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0o	µg/b	4.5L	4.8p	o.p	0% - 10%
		v P14oX: NuD f 7PFBN (R B Mv l brsy)	----	0.0o	µg/b	p.1O	p.4O	1.4	0% - 10%
EP231P: PFAS Sums (QC Lot: 4340647)									
v c 110949o-018	0pp5_NR 414_11050p nEyerEal lat qA	v P14oX: NuD f 7PFBN	----	0.0o	µg/b	0.LO	0.9L	9.8	0% - 10%
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0o	µg/b	0.95	0.C8	oo.1	0% - 10%
		v P14oX: NuD f 7PFBN (R B Mv l brsy)	----	0.0o	µg/b	0.LO	0.9L	9.8	0% - 10%
v c 110949o-04O	0pp5_NR 4O5_110508 nEyerEal lat qA	v P14oX: NuD f 7PFBN	----	0.0o	µg/b	0.09	0.0O	o4.4	3f bnDny
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0o	µg/b	0.09	0.0O	o4.4	3f bnDny
		v P14oX: NuD f 7PFBN (R B Mv l brsy)	----	0.0o	µg/b	0.09	0.0O	o4.4	3f bnDny
EP231P: PFAS Sums (QC Lot: 4340663)									
v c 110949o-049	0pp5_NR 491_110504 nEyerEal lat qA	v P14oX: NuD f 7PFBN	----	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny
		v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oC84-14-o	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny
		v P14oX: NuD f 7PFBN (R B Mv l brsy)	----	0.0o	µg/b	<0.0o	<0.0o	0.0	3f bnDny

Method Blank (MB) and Laboratory Control Sample (LCS) Report

T-e qualnyC AfEyrf l yerD c ey-f V / bat f rayf rC WaEd re7ers yf aE aEalOye 7ree Daynx yf w-nA- all reageEys are aVVeV nE y-e saDe nf luDes f r hrf hf nyf lEs as useV nE syaEVarV saDhle hreharayf lE. T-e hurhf se f 7 y-ns Qi haraDeyer ns yf Df Enyf r hf yeEyral lat f rayf rC AfEyaDnEayf lE. T-e qualnyC AfEyrf l yerD bat f rayf rC i f Eyrf l NaDhle (bi N) re7ers yf a Aerym7eV re7ereEAe Dayernal, f r a dEf wE nEyer7ereEAe 7ree Daynx shndeV wny- yargey aEalOyes. T-e hurhf se f 7y-ns Qi haraDeyer ns yf Df Enyf r Dey-f V hreAnsnf lE aEV aAAuraACnEVeheEVeEyf 7saDhle Daynx. MCEaDnA l eAf nerCbnDns are t aseV f E syaynsynAal enaluaynf lE f 7hrf AesseV bi N.

Nut -c aynx: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4341555)								
v P14oX: Per7uf rf t uyaEe sul7f EnAaAnV (PFWN)	4C5-O4-5	0.0001	Dg/dg	<0.0001	0.00ooo Dg/dg	o04	O1.0	o19
v P14oX: Per7uf rf heEyaEe sul7f EnAaAnV (PFPeN)	1C08-Lo-p	0.0001	Dg/dg	<0.0001	0.00oo9 Dg/dg	oo1	O4.0	o14
v P14oX: Per7uf rf - exaEe sul7f EnAaAnV (PFHxN)	455-p8-p	0.0001	Dg/dg	<0.0001	0.00op Dg/dg	CL.8	8O.0	o40
v P14oX: Per7uf rf - ehyaEe sul7f EnAaAnV (PFHhN)	4C5-L1-9	0.0001	Dg/dg	<0.0001	0.00ooL Dg/dg	o14	C0.0	o41
v P14oX: Per7uf rf f AyaEe sul7f EnAaAnV (PFUN)	oC84-14-o	0.0001	Dg/dg	<0.0001	0.00oo8 Dg/dg	o08	89.0	o48
v P14oX: Per7uf rf VeAaEe sul7f EnAaAnV (PFMN)	445-CO-4	0.0001	Dg/dg	<0.0001	0.00o1o Dg/dg	Lp.1	5L.0	o4p
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341555)								
v P14oX: Per7uf rf t uyaEf nAaAnV (PFWB)	4C5-11-p	0.00o	Dg/dg	<0.00o	0.00815 Dg/dg	Lo.p	Co.0	o45
v P14oX: Per7uf rf heEyaEf nAaAnV (PFPeB)	1C08-L0-4	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	9o.8	8L.0	o41
v P14oX: Per7uf rf - exaEf nAaAnV (PFHxB)	40O-1p-p	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o01	C0.0	o41
v P14oX: Per7uf rf - ehyaEf nAaAnV (PFHhB)	4C5-95-L	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	L8.5	Co.0	o4o
v P14oX: Per7uf rf f AyaEf nAaAnV (PFUB)	445-8O-o	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o00	8L.0	o44
v P14oX: Per7uf rf Ef EaEf nAaAnV (PF3B)	4C5-L5-o	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	L4.1	O1.0	o1L
v P14oX: Per7uf rf VeAaEf nAaAnV (PFMB)	445-C8-1	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o05	8L.0	o44
v P14oX: Per7uf rf uEVeAaEf nAaAnV (PFKEMB)	1059-Lp-9	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	oo4	8p.0	o48
v P14oX: Per7uf rf Vf VeAaEf nAaAnV (PFMfMB)	40O-55-o	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o09	8L.0	o45
v P14oX: Per7uf rf ynVeAaEf nAaAnV (PFTrMB)	O181L-Lp-9	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	C9.8	88.0	o4L
v P14oX: Per7uf rf yeyraVeAaEf nAaAnV (PFTeMB)	4C8-08-O	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	L9.L	8L.0	o44
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4341555)								
v P14oX: Per7uf rf f AyaEe sul7f EaDnVe (FUNB)	C5p-Lo-8	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	o01	8O.0	o4O
v P14oX: 3-c ey-Cl her7uf rf f AyaEe sul7f EaDnVe (c eFUNB)	4o508-41-9	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	oo0	C0.0	o40
v P14oX: 3-v y-Cl her7uf rf f AyaEe sul7f EaDnVe (v yFUNB)	po5o-50-1	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	L5.o	C0.0	o40
v P14oX: 3-c ey-Cl her7uf rf f AyaEe sul7f EaDnVf ey-aEf l (c eFUNv)	1ppp9-0L-O	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	o0p	C0.0	o40
v P14oX: 3-v y-Cl her7uf rf f AyaEe sul7f EaDnVf ey-aEf l (v yFUNv)	o8Lo-LL-1	0.0005	Dg/dg	<0.0005	0.004o1 Dg/dg	LL.4	C0.0	o40
v P14oX: 3-c ey-Cl her7uf rf f AyaEe sul7f EaDnVf aAeynAaAnV (c eFUNBB)	1455-4o-L	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	oo8	84.0	opp
v P14oX: 3-v y-Cl her7uf rf f AyaEe sul7f EaDnVf aAeynAaAnV (v yFUNBB)	1LLo-50-8	0.0001	Dg/dg	<0.0001	0.00o15 Dg/dg	Lp.o	8o.0	o4L
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341555)								
v P14oX: p:1 Fluf rf yelf Der sul7f EnAaAnV (p:1 FTN)	O5Oo1p-O1-p	0.0005	Dg/dg	<0.0005	0.00ooODg/dg	o04	81.0	op5
v P14oX: 8:1 Fluf rf yelf Der sul7f EnAaAnV (8:1 FTN)	1C8oL-LO-1	0.0005	Dg/dg	<0.0005	0.00ooL Dg/dg	o0O	8p.0	op0
v P14oX: 9:1 Fluf rf yelf Der sul7f EnAaAnV (9:1 FTN)	4Lo09-4p-p	0.0005	Dg/dg	<0.0005	0.00o1 Dg/dg	oo0	85.0	o4O

Nut -c aynx: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341555) - continued								
v P14oX: o0:1 Fluf rf yelf D er sulf7 EnA aAnV (o0:1 FTN)	o10118-80-0	0.0005	D g/dg	<0.0005	0.00o1o D g/dg	95.L	C0.0	o40
EP231P: PFAS Sums (QCLot: 4341555)								
v P14oX: NuD f 7PFBN	---	0.0001	D g/dg	<0.0001	----	----	----	----
v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0001	D g/dg	<0.0001	----	----	----	----
v P14oX: NuD f 7PFBN (R B MvI brsy)	---	0.0001	D g/dg	<0.0001	----	----	----	----

Nut -c aynx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4339776)								
v P14oX: Per7luf rf t uyaEe sulf7 EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	<0.01	0.111 µg/b	9Co	C1.0	o40
v P14oX: Per7luf rf heEyaEe sulf7 EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	0.145 µg/b	Lo.9	Cb.0	o1O
v P14oX: Per7luf rf - exaEe sulf7 EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	0.119 µg/b	94.O	89.0	o4o
v P14oX: Per7luf rf - ehyaEe sulf7 EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	<0.01	0.15 µg/b	94.o	8L.0	o4p
v P14oX: Per7luf rf f AyaEe sulf7 EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	<0.0o	0.141 µg/b	C9.1	85.0	op0
v P14oX: Per7luf rf VeAaEe sulf7 EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	0.1po µg/b	9o.0	54.0	op1
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340647)								
v P14oX: Per7luf rf t uyaEe sulf7 EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	<0.01	0.111 µg/b	o00	C1.0	o40
v P14oX: Per7luf rf heEyaEe sulf7 EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	0.145 µg/b	oop	Cb.0	o1O
v P14oX: Per7luf rf - exaEe sulf7 EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	0.119 µg/b	o04	89.0	o4o
v P14oX: Per7luf rf - ehyaEe sulf7 EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	<0.01	0.15 µg/b	o08	8L.0	o4p
v P14oX: Per7luf rf f AyaEe sulf7 EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	<0.0o	0.141 µg/b	LL.4	85.0	op0
v P14oX: Per7luf rf VeAaEe sulf7 EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	0.1po µg/b	LQL	54.0	op1
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340663)								
v P14oX: Per7luf rf t uyaEe sulf7 EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	<0.01	0.111 µg/b	L4.L	C1.0	o40
v P14oX: Per7luf rf heEyaEe sulf7 EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	0.145 µg/b	o01	Cb.0	o1O
v P14oX: Per7luf rf - exaEe sulf7 EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	0.119 µg/b	o04	89.0	o4o
v P14oX: Per7luf rf - ehyaEe sulf7 EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	<0.01	0.15 µg/b	Lp.0	8L.0	o4p
v P14oX: Per7luf rf f AyaEe sulf7 EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	<0.0o	0.141 µg/b	L4.1	85.0	op0
v P14oX: Per7luf rf VeAaEe sulf7 EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	0.1po µg/b	L5.8	54.0	op1
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4341163)								
v P14oX-C3k: Per7luf rf t uyaEe sulf7 EnA aAnV (PFWN)	4C5-O4-5	0.01	µg/b	<0.01	0.ppp µg/b	o00	C1.0	o40
v P14oX-C3k: Per7luf rf heEyaEe sulf7 EnA aAnV (PFPeN)	1C08-Lo-p	0.01	µg/b	<0.01	0.pOµg/b	oop	Cb.0	o1O
v P14oX-C3k: Per7luf rf - exaEe sulf7 EnA aAnV (PFHxN)	455-p8-p	0.0o	µg/b	<0.0o	0.p5Oµg/b	o04	89.0	o4o
v P14oX-C3k: Per7luf rf - ehyaEe sulf7 EnA aAnV (PFHhN)	4C5-L1-9	0.01	µg/b	<0.01	0.pCOµg/b	ooo	8L.0	o4p
v P14oX-C3k: Per7luf rf f AyaEe sulf7 EnA aAnV (PFUN)	oC84-14-o	0.0o	µg/b	<0.0o	0.p85 µg/b	LL.o	85.0	op0
v P14oX-C3k: Per7luf rf VeAaEe sulf7 EnA aAnV (PFMN)	445-CO-4	0.01	µg/b	<0.01	0.p91 µg/b	LQL	54.0	op1
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4339776)								

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4339776) - continued								
v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	o.15 µg/b	L4.0	O4.0	o1L
v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	0.15 µg/b	LL.5	O1.0	o1L
v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	0.15 µg/b	Op.O	O1.0	o1L
v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	0.15 µg/b	L1.o	O1.0	o40
v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	0.15 µg/b	99.1	Ob.0	o44
v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	0.15 µg/b	LL.O	8L.0	o40
v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	0.15 µg/b	O4.5	Ob.0	o1L
v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	99.1	8L.0	o44
v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	0.15 µg/b	9p.0	O1.0	o4p
v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	O9.o	85.0	opp
v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	0.815 µg/b	Lo.o	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340647)								
v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	o.15 µg/b	L1.L	O4.0	o1L
v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	0.15 µg/b	oo1	O1.0	o1L
v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	0.15 µg/b	99.5	O1.0	o1L
v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	0.15 µg/b	oo0	O1.0	o40
v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	0.15 µg/b	o0o	Ob.0	o44
v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	0.15 µg/b	ooo	8L.0	o40
v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	0.15 µg/b	98.0	Ob.0	o1L
v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	LL.9	8L.0	o44
v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	0.15 µg/b	L8.L	O1.0	o4p
v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	98.5	85.0	opp
v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	0.815 µg/b	o08	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340663)								
v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o	o.15 µg/b	Lp.8	O4.0	o1L
v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	0.15 µg/b	o0O	O1.0	o1L
v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	0.15 µg/b	9L.1	O1.0	o1L
v P14oX: Per7uf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	0.15 µg/b	o08	O1.0	o40
v P14oX: Per7uf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	0.15 µg/b	o05	Ob.0	o44
v P14oX: Per7uf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	0.15 µg/b	o09	8L.0	o40
v P14oX: Per7uf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	0.15 µg/b	L0.L	Ob.0	o1L
v P14oX: Per7uf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	o01	8L.0	o44
v P14oX: Per7uf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	0.15 µg/b	o0p	O1.0	o4p
v P14oX: Per7uf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.01	µg/b	<0.01	0.15 µg/b	Lp.9	85.0	opp
v P14oX: Per7uf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	0.815 µg/b	o05	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341163)								
v P14oX-C3 k: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.o	µg/b	<0.o0	1.5 µg/b	L1.L	O4.0	o1L
v P14oX-C3 k: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.01	µg/b	<0.01	0.5 µg/b	oo1	O1.0	o1L

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341163) - continued								
v P14oX-G k: Per7luf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.01	µg/b	<0.01	0.5 µg/b	99.5	O1.0	o1L
v P14oX-G k: Per7luf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.01	µg/b	<0.01	0.5 µg/b	oo0	O1.0	o40
v P14oX-G k: Per7luf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.0o	µg/b	<0.0o	0.5 µg/b	o0o	Ob.0	o44
v P14oX-G k: Per7luf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.01	µg/b	<0.01	0.5 µg/b	ooo	8L.0	o40
v P14oX-G k: Per7luf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.01	µg/b	<0.01	0.5 µg/b	98.0	Ob.0	o1L
v P14oX-G k: Per7luf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.01	µg/b	<0.01	0.5 µg/b	LL.9	8L.0	o44
v P14oX-G k: Per7luf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.01	µg/b	<0.01	0.5 µg/b	L8.L	O1.0	o4p
v P14oX-G k: Per7luf rf ynVeAaEf nA aAnV (PFTnMB)	O181L-Lp-9	0.01	µg/b	<0.01	0.5 µg/b	98.5	85.0	opp
v P14oX-G k: Per7luf rf yeyaVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.05	µg/b	<0.05	o.15 µg/b	o08	Ob.0	o41
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4339776)								
v P14oX: Per7luf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	0.15 µg/b	9L.L	8O.0	o4O
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	0.815 µg/b	94.o	89.0	opo
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	0.815 µg/b	Lp.0	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	0.815 µg/b	L5.0	O0.0	o40
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	0.815 µg/b	9O.O	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	0.15 µg/b	o01	85.0	o48
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	0.15 µg/b	Lo.p	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340647)								
v P14oX: Per7luf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	0.15 µg/b	o0p	8O.0	o4O
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	0.815 µg/b	L4.9	89.0	opo
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	0.815 µg/b	Lp.9	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	0.815 µg/b	o0O	O0.0	o40
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	0.815 µg/b	LL.O	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	0.15 µg/b	ooO	85.0	o48
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	0.15 µg/b	o0p	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663)								
v P14oX: Per7luf rf f AyaEe sulf EaDnVe (FUNB)	O5p-Lo-8	0.01	µg/b	<0.01	0.15 µg/b	L9.L	8O.0	o4O
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	0.815 µg/b	9L.0	89.0	opo
v P14oX: 3 -v y- Cl her7luf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	0.815 µg/b	oo1	O0.0	o40
v P14oX: 3 -c ey- Cl her7luf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	0.815 µg/b	L1.L	O0.0	o40

Nut -c ayrx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663) - continued								
v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	0.815 µg/b	L4.p	C0.0	o40
v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDrVf aAeyrA aArV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	0.15 µg/b	o0O	85.0	o48
v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVf aAeyrA aArV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	0.15 µg/b	o09	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4341163)								
v P14oX-G3 k: Per7uf rf f AyaEe sul7f EaDrVe (FUNB)	C5p-Lo-8	0.01	µg/b	<0.01	0.5 µg/b	o0p	8C0	o4O
v P14oX-G3 k: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDrVe (c eFUNB)	4o508-41-9	0.05	µg/b	<0.05	o.15 µg/b	L4.9	89.0	opo
v P14oX-G3 k: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVe (v yFUNB)	po5o-50-1	0.05	µg/b	<0.05	o.15 µg/b	Lp.9	C0.0	o40
v P14oX-G3 k: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDrVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.05	µg/b	<0.05	o.15 µg/b	o0O	C0.0	o40
v P14oX-G3 k: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.05	µg/b	<0.05	o.15 µg/b	LL.O	C0.0	o40
v P14oX-G3 k: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDrVf aAeyrA aArV (c eFUNBB)	1455-4o-L	0.01	µg/b	<0.01	0.5 µg/b	ooO	85.0	o48
v P14oX-G3 k: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDrVf aAeyrA aArV (v yFUNBB)	1LLo-50-8	0.01	µg/b	<0.01	0.5 µg/b	o0p	8o.0	o45
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4339776)								
v P14oX: p:1 Fluf rf yelf Der sul7f ErAaArV (p:1 FTN)	C5Co1p-O1-p	0.05	µg/b	<0.05	0.14p µg/b	98.4	84.0	op4
v P14oX: 8:1 Fluf rf yelf Der sul7f ErAaArV (8:1 FTN)	1C8oL-LO-1	0.05	µg/b	<0.05	0.149 µg/b	99.L	8p.0	op0
v P14oX: 9:1 Fluf rf yelf Der sul7f ErAaArV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	0.1p µg/b	L4.O	8C0	o49
v P14oX: o0:1 Fluf rf yelf Der sul7f ErAaArV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	0.1p1 µg/b	O1.9	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340647)								
v P14oX: p:1 Fluf rf yelf Der sul7f ErAaArV (p:1 FTN)	C5Co1p-O1-p	0.05	µg/b	<0.05	0.14p µg/b	o05	84.0	op4
v P14oX: 8:1 Fluf rf yelf Der sul7f ErAaArV (8:1 FTN)	1C8oL-LO-1	0.05	µg/b	<0.05	0.149 µg/b	o08	8p.0	op0
v P14oX: 9:1 Fluf rf yelf Der sul7f ErAaArV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	0.1p µg/b	o09	8C0	o49
v P14oX: o0:1 Fluf rf yelf Der sul7f ErAaArV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	0.1p1 µg/b	O9.O	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340663)								
v P14oX: p:1 Fluf rf yelf Der sul7f ErAaArV (p:1 FTN)	C5Co1p-O1-p	0.05	µg/b	<0.05	0.14p µg/b	ooo	84.0	op4
v P14oX: 8:1 Fluf rf yelf Der sul7f ErAaArV (8:1 FTN)	1C8oL-LO-1	0.05	µg/b	<0.05	0.149 µg/b	o09	8p.0	op0
v P14oX: 9:1 Fluf rf yelf Der sul7f ErAaArV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	0.1p µg/b	oo5	8C0	o49
v P14oX: o0:1 Fluf rf yelf Der sul7f ErAaArV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	0.1p1 µg/b	L4.L	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341163)								
v P14oX-G3 k: p:1 Fluf rf yelf Der sul7f ErAaArV (p:1 FTN)	C5Co1p-O1-p	0.05	µg/b	<0.05	0.p8L µg/b	o05	84.0	op4
v P14oX-G3 k: 8:1 Fluf rf yelf Der sul7f ErAaArV (8:1 FTN)	1C8oL-LO-1	0.05	µg/b	<0.05	0.pC8 µg/b	o08	8p.0	op0
v P14oX-G3 k: 9:1 Fluf rf yelf Der sul7f ErAaArV (9:1 FTN)	4Lo09-4p-p	0.05	µg/b	<0.05	0.p9 µg/b	o09	8C0	o49
v P14oX-G3 k: o0:1 Fluf rf yelf Der sul7f ErAaArV (o0:1 FTN)	o10118-80-0	0.05	µg/b	<0.05	0.p94 µg/b	O9.L	C0.0	o40

Nut -c aynx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 4339776)								
v P14oX: NuD f 7PFBN	---	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFBN (R B MvI brsy)	---	0.0o	µg/b	<0.0o	----	----	----	----
EP231P: PFAS Sums (QCLot: 4340647)								
v P14oX: NuD f 7PFBN	---	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFBN (R B MvI brsy)	---	0.0o	µg/b	<0.0o	----	----	----	----
EP231P: PFAS Sums (QCLot: 4340663)								
v P14oX: NuD f 7PFBN	---	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX: NuD f 7PFBN (R B MvI brsy)	---	0.0o	µg/b	<0.0o	----	----	----	----
EP231P: PFAS Sums (QCLot: 4341163)								
v P14oX-G3k: NuD f 7PFBN	---	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX-G3k: NuD f 7PFHxN aEV PFUN	455-p8-p/oO 84-14-o	0.0o	µg/b	<0.0o	----	----	----	----
v P14oX-G3k: NuD f 7PFBN (R B MvI brsy)	---	0.0o	µg/b	<0.0o	----	----	----	----

Matrix Spike (MS) Report

T- e qualnyC Af Eyrf l yerD c aynx Nhrde (c N) re7ers yf aE nEyralat f rayf rC shlny saDhle shrdeV wny- a rehreseEyaynne sey f 7 yargey aEalOyes. T- e hurhf se f 7 y-ns Qi haraDeyer ns yf DfEnyf r hfyeEyral Daynx e7eAys f E aEalOye reAf nerres. NyayA l eAf nerCbnDns as her lat f rayf rCMaya QualnyCUt jeAynes (MQUs). GYeal reAf nerCraEges syayeV DaCt e wanneV nEy- e enreEyf 7saDhle Daynx nEyer7ereEAe.

Nut -c aynx: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4341555)							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: Per7uf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.00ooo Dg/dg	Lo.8	O1.0	o19
		v P14oX: Per7uf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.00oo9 Dg/dg	o10	O4.0	o14
		v P14oX: Per7uf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.00oop Dg/dg	LOo	8O.0	o40
		v P14oX: Per7uf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.00ooL Dg/dg	o10	O0.0	o41
		v P14oX: Per7uf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.00oo8 Dg/dg	o0L	89.0	o48
		v P14oX: Per7uf rf VeAaEe sul7f EnA aAnV (PFMN)	445-OO-4	0.00o1o Dg/dg	Lp.8	5L.0	o4p
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341555)							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: Per7uf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	0.00815 Dg/dg	9o.1	Oo.0	o45
		v P14oX: Per7uf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.00o15 Dg/dg	Op.0	8L.0	o41
		v P14oX: Per7uf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.00o15 Dg/dg	Lo.p	O0.0	o41

Nut -c ayrnx: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341555) - continued							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: Per7uf rf - ehyaEf rnAaAnV (PFHhB)	4O5-95-L	0.00o15 Dg/dg	9L.0	Oo.0	o4o
		v P14oX: Per7uf rf f AyaEf rnAaAnV (PFUB)	445-8O-o	0.00o15 Dg/dg	L0.1	8L.0	o44
		v P14oX: Per7uf rf Ef EaEf rnAaAnV (PF3B)	4O5-L5-o	0.00o15 Dg/dg	98.p	O1.0	o1L
		v P14oX: Per7uf rf VeAaEf rnAaAnV (PFMB)	445-O8-1	0.00o15 Dg/dg	L1.0	8L.0	o44
		v P14oX: Per7uf rf uEVeAaEf rnAaAnV (PFKEMB)	1059-Lp-9	0.00o15 Dg/dg	L8.0	8p.0	o48
		v P14oX: Per7uf rf Vf VeAaEf rnAaAnV (PFMfMB)	40O-55-o	0.00o15 Dg/dg	9Oo	8L.0	o45
		v P14oX: Per7uf rf ynVeAaEf rnAaAnV (PFTrMB)	O181L-Lp-9	0.00o15 Dg/dg	94.p	88.0	o4L
		v P14oX: Per7uf rf yeyraVeAaEf rnAaAnV (PFTeMB)	4O8-08-O	0.004o1 Dg/dg	94.4	8L.0	o44
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4341555)							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: Per7uf rf f AyaEe sul7fEaDnVe (FUNB)	O5p-Lo-8	0.00o15 Dg/dg	Lp.O	8O.0	o4O
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7fEaDnVe (c eFUNB)	4o508-41-9	0.004o1 Dg/dg	OO.0	O0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7fEaDnVe (v yFUNB)	po5o-50-1	0.004o1 Dg/dg	91.1	O0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7fEaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.004o1 Dg/dg	L4.9	O0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7fEaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.004o1 Dg/dg	9O.5	O0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7fEaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.00o15 Dg/dg	Lp.5	84.0	opp
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7fEaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.00o15 Dg/dg	O9.9	8o.0	o4L
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341555)							
v c 110949o-0po	0pp5_NM4p8_11050p	v P14oX: p:1 Fluf rf yelf Der sul7fEnAaAnV (p:1 FTN)	O5Oo1p-O1-p	0.00ooODg/dg	Lo.1	81.0	op5
		v P14oX: 8:1 Fluf rf yelf Der sul7fEnAaAnV (8:1 FTN)	1O8oL-LO-1	0.00ooL Dg/dg	o05	8p.0	op0
		v P14oX: 9:1 Fluf rf yelf Der sul7fEnAaAnV (9:1 FTN)	4Lo09-4p-p	0.00o1 Dg/dg	o00	85.0	o4O
		v P14oX: o0:1 Fluf rf yelf Der sul7fEnAaAnV (o0:1 FTN)	o10118-80-0	0.00o1o Dg/dg	91.1	O0.0	o40

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4339776)							
v c 110949o-0oo	0pp5_c R 0p8G110504	v P14oX: Per7uf rf t uyaEe sul7fEnAaAnV (PFWN)	4O5-O4-5	0.111 µg/b	Lp.p	O1.0	o40
		v P14oX: Per7uf rf heEyaEe sul7fEnAaAnV (PFPeN)	1O08-Lo-p	0.145 µg/b	LL.O	Oo.0	o1O
		v P14oX: Per7uf rf - exaEe sul7fEnAaAnV (PFHxN)	455-p8-p	0.119 µg/b	# 3 f y MeyerDnEeV	89.0	o4o
		v P14oX: Per7uf rf - ehyaEe sul7fEnAaAnV (PFHhN)	4O5-L1-9	0.149 µg/b	L8.L	8L.0	o4p
		v P14oX: Per7uf rf f AyaEe sul7fEnAaAnV (PFUN)	oO84-14-o	0.141 µg/b	# 3 f y MeyerDnEeV	85.0	op0
		v P14oX: Per7uf rf VeAaEe sul7fEnAaAnV (PFMN)	445-OO-4	0.1po µg/b	99.O	54.0	op1

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340647)							
v c 110949o-04p	0pp5_NR 455_11050p rEyerEal lat qA	v P14oX: Per7luf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.111 µg/b	oo8	O1.0	o40
		v P14oX: Per7luf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.145 µg/b	oo4	Ob.0	o1O
		v P14oX: Per7luf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.119 µg/b	oo1	89.0	o4o
		v P14oX: Per7luf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.149 µg/b	o0O	8L.0	o4p
		v P14oX: Per7luf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.141 µg/b	o4O	85.0	op0
		v P14oX: Per7luf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.1po µg/b	99.O	54.0	op1
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340663)							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: Per7luf rf t uyaEe sul7f EnA aAnV (PFWN)	4O5-O4-5	0.111 µg/b	ooL	O1.0	o40
		v P14oX: Per7luf rf heEyaEe sul7f EnA aAnV (PFPeN)	1O08-Lo-p	0.145 µg/b	o09	Ob.0	o1O
		v P14oX: Per7luf rf - exaEe sul7f EnA aAnV (PFHxN)	455-p8-p	0.119 µg/b	o18	89.0	o4o
		v P14oX: Per7luf rf - ehyaEe sul7f EnA aAnV (PFHhN)	4O5-L1-9	0.149 µg/b	o0o	8L.0	o4p
		v P14oX: Per7luf rf f AyaEe sul7f EnA aAnV (PFUN)	oO84-14-o	0.141 µg/b	LL.p	85.0	op0
		v P14oX: Per7luf rf VeAaEe sul7f EnA aAnV (PFMN)	445-CO-4	0.1po µg/b	Lo.p	54.0	op1
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4339776)							
v c 110949o-0oo	0pp5_c R 0p8G110504	v P14oX: Per7luf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	o.15 µg/b	OL.o	O4.0	o1L
		v P14oX: Per7luf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.15 µg/b	LL.O	O1.0	o1L
		v P14oX: Per7luf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.15 µg/b	O1.1	O1.0	o1L
		v P14oX: Per7luf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.15 µg/b	L1.8	O1.0	o40
		v P14oX: Per7luf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.15 µg/b	L1.8	Ob.0	o44
		v P14oX: Per7luf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.15 µg/b	L8.o	8L.0	o40
		v P14oX: Per7luf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.15 µg/b	Ob.L	Ob.0	o1L
		v P14oX: Per7luf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.15 µg/b	95.L	8L.0	o44
		v P14oX: Per7luf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.15 µg/b	99.9	O1.0	o4p
		v P14oX: Per7luf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.15 µg/b	OO.4	85.0	opp
		v P14oX: Per7luf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.815 µg/b	Lo.1	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340647)							
v c 110949o-04p	0pp5_NR 455_11050p rEyerEal lat qA	v P14oX: Per7luf rf t uyaEf nA aAnV (PFWB)	4O5-11-p	o.15 µg/b	Lo.1	O4.0	o1L
		v P14oX: Per7luf rf heEyaEf nA aAnV (PFPeB)	1O08-L0-4	0.15 µg/b	oo4	O1.0	o1L
		v P14oX: Per7luf rf - exaEf nA aAnV (PFHxB)	40O-1p-p	0.15 µg/b	Lp.p	O1.0	o1L
		v P14oX: Per7luf rf - ehyaEf nA aAnV (PFHhB)	4O5-95-L	0.15 µg/b	ooo	O1.0	o40
		v P14oX: Per7luf rf f AyaEf nA aAnV (PFUB)	445-8O-o	0.15 µg/b	o0p	Ob.0	o44
		v P14oX: Per7luf rf Ef EaEf nA aAnV (PF3 B)	4O5-L5-o	0.15 µg/b	oo4	8L.0	o40
		v P14oX: Per7luf rf VeAaEf nA aAnV (PFMB)	445-O8-1	0.15 µg/b	O8.0	Ob.0	o1L
		v P14oX: Per7luf rf uEVeAaEf nA aAnV (PFKEMB)	1059-Lp-9	0.15 µg/b	L8.1	8L.0	o44
		v P14oX: Per7luf rf Vf VeAaEf nA aAnV (PFMf MB)	40O-55-o	0.15 µg/b	L0.o	O1.0	o4p
		v P14oX: Per7luf rf ynVeAaEf nA aAnV (PFTrMB)	O181L-Lp-9	0.15 µg/b	OO.o	85.0	opp
		v P14oX: Per7luf rf yeyraVeAaEf nA aAnV (PFTeMB)	4O8-08-O	0.815 µg/b	L5.8	Ob.0	o41
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340663)							

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340663) - continued							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: Per7uf rf t uyaEf rA aAnV (PFWB)	4C5-11-p	o.15 µg/b	Cp.1	C4.0	o1L
		v P14oX: Per7uf rf heEyaEf rA aAnV (PFPeB)	1C08-L0-4	0.15 µg/b	oo5	C1.0	o1L
		v P14oX: Per7uf rf - exaEf rA aAnV (PFHxB)	40O-1p-p	0.15 µg/b	Lo.p	C1.0	o1L
		v P14oX: Per7uf rf - ehyaEf rA aAnV (PFHhB)	4C5-95-L	0.15 µg/b	o09	C1.0	o40
		v P14oX: Per7uf rf f AyaEf rA aAnV (PFUB)	445-8O-o	0.15 µg/b	o0O	Co.0	o44
		v P14oX: Per7uf rf Ef EaEf rA aAnV (PF3 B)	4C5-L5-o	0.15 µg/b	o0L	8L.0	o40
		v P14oX: Per7uf rf VeAaEf rA aAnV (PFMB)	445-C8-1	0.15 µg/b	95.0	Co.0	o1L
		v P14oX: Per7uf rf uEVeAaEf rA aAnV (PFKEMB)	1059-Lp-9	0.15 µg/b	L5.0	8L.0	o44
		v P14oX: Per7uf rf Vf VeAaEf rA aAnV (PFMf MB)	40O-55-o	0.15 µg/b	o0o	C1.0	o4p
		v P14oX: Per7uf rf ynVeAaEf rA aAnV (PFTrMB)	C181L-Lp-9	0.15 µg/b	98.4	85.0	opp
		v P14oX: Per7uf rf yeyraVeAaEf rA aAnV (PFTeMB)	4C8-08-O	0.815 µg/b	L9.1	Co.0	o41
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4339776)							
v c 110949o-0oo	0pp5_c R 0p8G_110504	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	C5p-Lo-8	0.15 µg/b	L0.p	8C0	o4O
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.815 µg/b	89.5	89.0	opo
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.815 µg/b	C9.L	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.815 µg/b	98.L	C0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.815 µg/b	98.9	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.15 µg/b	o05	85.0	o48
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.15 µg/b	o0o	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340647)							
v c 110949o-04p	0pp5_NR 455_11050p nEyerEal lat qA	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	C5p-Lo-8	0.15 µg/b	L9.L	8C0	o4O
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVe (c eFUNB)	4o508-41-9	0.815 µg/b	C0.O	89.0	opo
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVe (v yFUNB)	po5o-50-1	0.815 µg/b	C1.1	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.815 µg/b	L1.8	C0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.815 µg/b	95.8	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sulf EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.15 µg/b	o09	85.0	o48
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sulf EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.15 µg/b	Lo.0	8o.0	o45
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663)							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: Per7uf rf f AyaEe sulf EaDnVe (FUNB)	C5p-Lo-8	0.15 µg/b	L5.0	8C0	o4O

Nut -c ayrnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663) - continued							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVe (c eFUNB)	4o508-41-9	0.815 µg/b	91.1	89.0	opo
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVe (v yFUNB)	po5o-50-1	0.815 µg/b	9L.1	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVf ey- aEf l (c eFUNv)	1ppp9-0L-O	0.815 µg/b	L8.5	C0.0	o40
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVf ey- aEf l (v yFUNv)	o8Lo-LL-1	0.815 µg/b	Lp.o	C0.0	o40
		v P14oX: 3 -c ey- Cl her7uf rf f AyaEe sul7f EaDnVf aAeynA aAnV (c eFUNBB)	1455-4o-L	0.15 µg/b	o04	85.0	o48
		v P14oX: 3 -v y- Cl her7uf rf f AyaEe sul7f EaDnVf aAeynA aAnV (v yFUNBB)	1LLo-50-8	0.15 µg/b	o00	8o.0	o45
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4339776)							
v c 110949o-0oo	0pp5_c R 0p8G110504	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	C5Cb1p-O1-p	0.14p µg/b	L4.p	84.0	op4
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.149 µg/b	L1.o	8p.0	op0
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.1p µg/b	L9.O	8O.0	o49
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.1p1 µg/b	Cb.9	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340647)							
v c 110949o-04p	0pp5_NR 455_11050p nEyerEal lat qA	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	C5Cb1p-O1-p	0.14p µg/b	o04	84.0	op4
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.149 µg/b	oo4	8p.0	op0
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.1p µg/b	oo8	8O.0	o49
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.1p1 µg/b	Cp.O	C0.0	o40
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340663)							
v c 110949o-050	0pp5_c R 4o1_11050p	v P14oX: p:1 Fluf rf yelf D er sul7f EnA aAnV (p:1 FTN)	C5Cb1p-O1-p	0.14p µg/b	oo1	84.0	op4
		v P14oX: 8:1 Fluf rf yelf D er sul7f EnA aAnV (8:1 FTN)	1C8oL-LO-1	0.149 µg/b	oo4	8p.0	op0
		v P14oX: 9:1 Fluf rf yelf D er sul7f EnA aAnV (9:1 FTN)	4Lo09-4p-p	0.1p µg/b	o08	8O.0	o49
		v P14oX: o0:1 Fluf rf yelf D er sul7f EnA aAnV (o0:1 FTN)	o10118-80-0	0.1p1 µg/b	O1.p	C0.0	o40

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2208381**	Page	: 1 of 11
Amendment	: **1**		
y Qei b	: **DONT NOT USE - LOG UNDER MWHAUS**	4aLoratort	: ni Eroi v ei baQmlEDoi s eQouri e
[redacted]	[redacted]	Te@hhoi e	: [redacted]
ProVéMo	: I Ny _j 995_PFc AGs P	mabe Aav h@DHeMelEe2	: j 0Rs at Rdj dd
Albe	: J ai 2lai a Gi JaDe	NDDue mabe	: j dR ui Rdj dd
Aav h@r	: [redacted]	Qo) of Dav h@DreMelEe2	: - W
Gr2er i uv Ler	: R	Qo) of Dav h@Dai aQDe2	: - j

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

J rlef v ebho2 Duv v arleDai 2 referei MeDare aQo hroEl2e2 bo aDDDbli braMeaLlQbt)

Summary of Outliers

Outliers : Quality Control Samples

ThlDrehorbhlghQghbDoubQerDf@agge2 li bhe k uaQbt y oi broQk y UHehorb)

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

s abrl% **WATER**

y ov houi 2 Srouh Qav e	4aLoratort Aav h@ Mn	y Qei bAav h@ Mn	Analyte	y c A Quv Ler	mata	4lv ltD	Comment
Matrix Spike (MS) Recoveries							
nPd31c: PerfQoroaQt CAuQoi lMcM2D	ns ddj 8381RRj 11	j 995_s O j 9- N ddj 5j 3	**Perfluorohexane sulfonic acid (PFHxS)**	355R9- R9	Qob meterv li e2	RRRR	**MS recovery not determined, background level greater than or equal to 4x spike level.**
nPd31c: PerfQoroaQt CAuQoi lMcM2D	ns ddj 8381RRj 11	j 995_s O j 9- N ddj 5j 3	**Perfluorooctane sulfonic acid (PFOS)**	1W 3Rd3R4	Qob meterv li e2	RRRR	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

s abrl% **WATER**

k uaQbt y oi broCAav h@ Tt he	y oui b		Habe &7 U		k uaQbt y oi broCAheMfiMatboi
s etho2	k y	Hegu@r	c NbuaC	n %eMbe2	
4aLoratort muh0MabeD&mx PU					
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFcAULt 4y s As A	9	5W	Wjj d	1j)j j	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFcAULt 4y s As A	j	1	j)j j	1j)j j	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s abrl%AhlYeD&s AU					
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFcAULt 4y s As A	j	1	j)j j	5)j j	QnPs dj 13 J 3 ; c4A k y Abai 2ar2

Analysis Holding Time Compliance

NtDav h@Dare l2ei bfle2 LeQq aDhaEli g Leei ai aCDe2 or e%braMbe2 oubD2e of reMbv v ei 2e2 hoQ2li g bv eDBbhlDDhouQ2 Le baYei li bo Mbi D2eratboi q hei li berhrebi g reDuGDD)

ThlD rehorb Duv v arlzeD e%braMboi w hreharatboi ai 2 ai aCDlD bv eD ai 2 Mbv hareD eaMh q lth c4A reMbv v ei 2e2 hoQ2li g bv eD &referei Mi g x AnPc AO 89- B c Pp c B c A ai 2 QnPs U LaDe2 oi bhe Dav h@ Mbi bali er hroE2e2) mabeDrehorbe2 rehreDei bflrDb2abe of e%braMboi or ai aCDlDai 2 hreMb2e DuLDe, uei b2lQbboi Dai 2 rerui D) c QDbi g of LreaMheD&f ai t UlDhroE2e2 hereli)

poQ2li g bv e for @aMhabe v etho2D &e)g) Ty 4PU Eart aMbor2li g bo bhe ai aCbeD rehorbe2) c DDeDDv ei b Mbv hareD bhe @aMh 2abe q lth bhe DhorbeDb ai aCbe hoQ2li g bv e for bhe e, ulEa@i b DblC v etho2) TheDe are: orgai lMC 19 2at DBv erMurt d8 2at D; obher v ebaCD 18j 2at D) c reMbr2e2 LreaMh 2oeDi obguarai bee a LreaMh for aCQ oi REoGbl@ harav eberD)

poQ2li g bv eD for ***VOC in soils*** Eart aMbor2li g bo ai aCbeD of li bereDb) I li t C y h@rl2e ai 2 Abirei e hoQ2li g bv e lD W2at D' otherD 19 2at D) c reMbr2e2 LreaMh 2oeD i ob guarai bee a LreaMh for aCC I Gy ai aCbeD ai 2 Dhouq2 Le Eerlfle2 li MaDe bhe rehorbe2 LreaMh lDa faCDe hoDbEe or I li t C y h@rl2e ai 2 Abirei e are i obYet ai aCbeDof li bereDbMbi Meri)

s abrl% **SOIL**

nEaQabboi : × = poQ2li g bv e LreaMh / ✓ = O lbhli hoQ2li g bv e)

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
j 995_Am38d_ddj 5j 3		**03-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	1WRs at Rdj dd	✓
HDPE Soil Jar (EA055)								
j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	18Rs at Rdj dd	✓
HDPE Soil Jar (EA055)								
j 995_Am3W5_ddj 5j -		**06-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	dj Rs at Rdj dd	✓
HDPE Soil Jar (EA055)								
j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**----**	RRRR	RRRR	**17-May-2022**	d1Rs at Rdj dd	✓

s abrl% **SOIL**

nEaQatboi : × = p oQ2li g tbv e LreaMh / ✓ = O lbhli ho Q2li g tbv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓

s abrl% **SOIL**

nEaQabtoi : × = p oQ2li g tbv e LreaMh / ✓ = O lbhli ho Q2li g tbv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X) j 995_Am38d_ddj 5j 3		**03-May-2022**	**17-May-2022**	3j RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3d3_ddj 5j 9B	j 995_Am39- _ddj 5j 9	**04-May-2022**	**17-May-2022**	31RGMbRdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am3W5_ddj 5j -		**06-May-2022**	**17-May-2022**	j dRQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓
HDPE Soil Jar (EP231X) j 995_Am355_ddj 5j 9B	j 995_k y 1j 0_ddj 5j 9	**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**18-May-2022**	d- Rui Rdj dd	✓

s abrl% **WATER**

nEaQabtoi : × = p oQ2li g tbv e LreaMh / ✓ = O lbhli ho Q2li g tbv e)

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

s abrl% **WATER**

nEaQabloi : × = p oQ2li g blv e LreaMh / ✓ = O lbhli ho Q2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC QaL , MB							
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3W _ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

s abrl% **WATER**

nEaQabloi : × = poQ2li g blv e LreaMh / ✓ = O lbhli hoQ2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC QaL , MB							
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W_ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W_ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3Wj _ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W_ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

s abrl% **WATER**

nEaQabloi : × = poQ2li g blv e LreaMh / ✓ = O lbhli hoQ2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC QaL , MB							
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3Wy _ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

s abrl% **WATER**

nEaQabloi : × = p oQ2li g blv e LreaMh / ✓ = O lbhli ho Q2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC QaL , MB							
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W_ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W_ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3W_ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W_ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

s abrl% **WATER**

nEaQabloi : × = p oQ2li g blv e LreaMh / ✓ = O lbhli ho Q2li g blv e)

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
j 995_s Oj dj _ddj 5j 3B	j 995_s Oj 39_ddj 5j 3B	**03-May-2022**	**16-May-2022**	3j RGMbRdj dd	✓	**16-May-2022**	3j RGMbRdj dd	✓
j 995_s Oj 35_ddj 5j 3B	j 995_s Oj 9d_ddj 5j 3B							
j 995_s Oj 93_ddj 5j 3B	j 995_s Oj 9- m_ddj 5j 3B							
j 995_s O35j _m_ddj 5j 3B	j 995_s O351_ddj 5j 3 Ri orv aCB							
j 995_s O35d_ddj 5j 3B	j 995_AO38d_ddj 5j 3 Rli beri aCQaL , MB							
j 995_AO38W_ddj 5j 3B	j 995_k y 1j j _ddj 5j 3B							
j 995_k y 1j 1_ddj 5j 3B	j 995_k y 1j - _ddj 5j 3							
HDPE (no PTFE) (EP231X)								
j 995_s Oj 9- N ddj 5j 3B	j 995_AO3d1_ddj 5j 9B	**04-May-2022**	**16-May-2022**	31RGMbRdj dd	✓	**16-May-2022**	31RGMbRdj dd	✓
j 995_AO3dd_ddj 5j 9B	j 995_AO3d3_ddj 5j 9 Rli beri aCQaL , MB							
j 995_AO3d9_ddj 5j 9B	j 995_AO3d- _ddj 5j 9B							
j 995_AO333_ddj 5j 9B	j 995_AO33- _ddj 5j 9B							
j 995_AO338_ddj 5j 9B	j 995_AO39- _ddj 5j 9B							
j 995_AO390_ddj 5j 9B	j 995_k y 3j j _ddj 5j 3B j 995_AO355_ddj 5j 9 Rli beri aC							
QaL , MB								
j 995_s O31d_ddj 5j 9B								
j 995_s O3j W_ddj 5j 9B	j 995_s O3j 9_ddj 5j 9B							
j 995_k y 1j W_ddj 5j 9								
HDPE (no PTFE) (EP231X)								
j 995_s Oj j 0_ddj 5j 5B	j 995_s Oj 1d_ddj 5j 5B	**05-May-2022**	**16-May-2022**	j 1RQoERdj dd	✓	**16-May-2022**	j 1RQoERdj dd	✓
j 995_s Oj 18_ddj 5j 5B	j 995_s Oj d0_ddj 5j 5B							
j 995_s Oj 5d_ddj 5j 5B	j 995_s O353_ddj 5j 5B							
j 995_s O359_ddj 5j 5B	j 995_s O9j 3_ddj 5j 5B							
j 995_s O9j 9_ddj 5j 5B	j 995_k y 3j 3_ddj 5j 9							
HDPE (no PTFE) (EP231X)								
j 995_s O395_ddj 5j - B	j 995_s O39- _ddj 5j - B	**06-May-2022**	**16-May-2022**	j dRQoERdj dd	✓	**16-May-2022**	j dRQoERdj dd	✓
j 995_s O35j _A_ddj 5j - B	j 995_AO3Wy _ddj 5j - B							
j 995_AO3W9_ddj 5j - B	j 995_AO3W5_ddj 5j - Rli beri aCQaL , MB							
j 995_k y 3j 5_ddj 5j 5B	j 995_s O39d_ddj 5j - B							
j 995_k y 111_ddj 5j -								
HDPE (no PTFE) (EP231X)								
j 995_k y 3j W_ddj 5j - B	j 995_k y 1j 3_ddj 5j 9B	**07-May-2022**	**16-May-2022**	j 3RQoERdj dd	✓	**16-May-2022**	j 3RQoERdj dd	✓
j 995_k y 1j 9_ddj 5j 9								
HDPE (no PTFE) (EP231X-INJ)								
j 995_s O3- 1_ddj 5j -		**07-May-2022**	**17-May-2022**	j 3RQoERdj dd	✓	**17-May-2022**	j 3RQoERdj dd	✓

Quality Control Parameter Frequency Compliance

The foQQq li g rehorbDuv v arlDeDthe fre, uei Mi of @aLorabort k y Dav h@Dai aCDe2 qlthli the ai aCtMaCQbsDUli qhlMn the DuLv lthe2 Dav h@sDUqaDsqereUhroMeDDe2) cMuaCrabe Dhou@2 Le greaber thai or e, uaQto the e%heMe2 rabe) c QDbi g of LreaMheDIDhroE2e2 li the Auv v art of GubQerD)

s abrl% **SOIL**

nEaQabboi : × = k uaQbt y oi broCre, uei Mi obq lthli DheMfiMabboi / ✓ = k uaQbt y oi broCre, uei Mi q lthli DheMfiMabboi)

k uaQbt y oi broCAav h@ Tt he		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
4aLorabort muhQMabeD&mx PU							
s olDbure y oi bei b	ncj 55	d	19	**14.29**	**10.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	d	10	**10.53**	**10.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
4aLorabort y oi broCAav h@D&4y AU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	1	10	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s ethno2 J@i YD&s J U							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	1	10	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s abrl%AhlYeD&s AU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	1	10	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2

s abrl% **WATER**

nEaQabboi : × = k uaQbt y oi broCre, uei Mi obq lthli DheMfiMabboi / ✓ = k uaQbt y oi broCre, uei Mi q lthli DheMfiMabboi)

k uaQbt y oi broCAav h@ Tt he		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
4aLorabort muhQMabeD&mx PU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	9	5W	**7.02**	**10.00**	×	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31XRQ.	j	1	**0.00**	**10.00**	×	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
4aLorabort y oi broCAav h@D&4y AU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	3	5W	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31XRQ.	1	1	**100.00**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s ethno2 J@i YD&s J U							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	3	5W	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31XRQ.	1	1	**100.00**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
s abrl%AhlYeD&s AU							
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31X	3	5W	**5.26**	**5.00**	✓	QnPs dj 13 J 3 ; c4A k y Abai 2ar2
PerRai 2 PoCfQoroaQt CAuLDbai MeD&PFc AULt 4y s As A	nPd31XRQ.	j	1	**0.00**	**5.00**	×	QnPs dj 13 J 3 ; c4A k y Abai 2ar2

Brief Method Summaries

The ai aCtMaChroMe2ureDuDe2 Lt the ni Eroi v ei baCmIEDoi haEe Leei 2eEeGhe2 frov eDaLCDhe2 li beri atioi aCC reMogi lze2 hroMe2ureDDuMh aDthoDe huLCDhe2 Lt the x A nPc BcPpcBcA ai 2 QnPs) Ni houDe 2eEeGhe2 hroMe2ureDare ev hGt e2 li the aLDei Me of 2oMuv ei be2 Dbai 2ar2Dor Lt MQei bre, ueDb) The foGGqli g rehorbhroE2eDLrlef 2eDMIhbioi Dof the ai aCtMaChroMe2ureDev hGt e2 for reDuGDrehorbe2 li the y erbfIMabe of ci aCDID) AourMeDfrov qhIMh c4A v ethio2DhaEe Leei 2eEeGhe2 are hroE2e2 qIbhli the s ethio2 meDMIhbioi D)

Analytical Methods	Method	Matrix	Method Descriptions
s olDoure y oi bei b	nci 55	AGM4	Ni houDe: c graEv ebrIMhroMe2ure LaDe2 oi q elghbGDDoEer a 1d hour 2rt li g herlo2 ab1j 5R11j 2egreeDy) ThIDv ethio2 IDMov hGai bqIbh QnPs AMhe2uGe J &8U)
PerRai 2 PoCfQuoroaGt CAuLDbai MeD &PFcAULt 4y s As A	nPd31X	AGM4	NiRhouDe: c i aCDID of DolCDLt DoGEei be%braMbioi foGGqe2 Lt 4y RnGeMbroDhrat Rs ARs ABQegabEe s o2e uDi g s Hs uDi g li beri aCDbai 2ar2 , uai bbabioi) NDobohIMaCC GaLeGe2 ai aGgueDof bargebai aCbeDuDe2 aDli beri aC Dbai 2ar2Dai 2 DurrogabeDare a22e2 bo a horbioi of DolCqhIMh IDbhei e%braMbe2 qIbh s TJn ai 2 ai loi halrli g reageibj c horbioi of e%braMbIDe%Mhai ge2 li bo bhe ai aCtMaCDoGEei bv I%ureBMov Lli e2 qIbh ai e, uaCEoQv e reageibqaber ai 2 flGere2 for ai aCDID) s ethio2 hroMe2ureDai 2 2aba , uaCbt oLvéMbEeDMoi forv bo x A momk As 5)3BbaLGe JR15 re, ulrev ei bD)
PerRai 2 PoCfQuoroaGt CAuLDbai MeD &PFcAULt 4y s As A	nPd31X	OcTnH	NiRhouDe: c i aCDID of freDh ai 2 DaCI e qaberDLt AoC2 PhaDe n%braMbioi &APnUfoGGqe2 Lt 4y RnGeMbroDhrat Rs ARs ABQegabEe s o2e uDi g s Hs ai 2 li beri aCDbai 2ar2 , uai bbabioi) NDobohIMaCC GaLeGe2 ai aGgueDof bargebai aCbeDuDe2 aDli beri aCDbai 2ar2Dai 2 DurrogabeDare a22e2 bo bhe Dav hGe Moi bali er) The ei bre Moi bei bDare brai Dferre2 bo a DoC2 hhaDe e%braMbioi &APnUMarbrl2ge) The Dav hGe Moi bali er IDDuMMeDDIEeC rli De2 qIbh aC, uobDof bhe eQbioi DoGEei b) The eQbe2 e%braMbIDMov Lli e2 qIbh ai e, uaC EoQv e of reageibqaber ai 2 a horbioi IDflGere2 for ai aCDID) s ethio2 hroMe2ureDai 2 2aba , uaCbt oLvéMbEeD Moi forv bo x A momk As 5)3BbaLGe JR15 re, ulrev ei bD)
PerRai 2 PoCfQuoroaGt CAuLDbai MeD &PFcAULt 4y s As A	nPd31XRQ.	OcTnH	NiRhouDe: mIreMbli véMbioi ai aCDID of freDh qaberDafber 2IQubioi &I:1Uqlbh v oLIGe hhaDe DoGEei b) ci aCDIDLt 4y RnGeMbroDhrat Rs ARs ABQegabEe s o2e uDi g s Hs) O here Mov v erMaCC aEaIGaLGeBIDobohIMaCC GaLeGe2 ai aGgueDof bhe bargebai aCbeDare uDe2 aDli beri aCDbai 2ar2Dfor , uai bbflMabioi) O here a GaLeGe2 ai aGgue ID i obMov v erMaCC aEaIGaLGeBbhe li beri aCDbai 2ar2 qIbh Dv IGr Mhev IDbt ai 2 bhe MGDeDbretei bioi bv e bo bhe bargebIDuDe2 for , uai bbflMabioi) The mk G for li beri aCDbai 2ar2 reDhoi De ID 5j R15j 7 of bhabeDbaLCDhe2 abli lbhaC MaCLrabioi) PFGA ID, uai bbfle2 uDi g a Merbbfle2BbraMeaLGe Dbai 2ar2 Moi DDDi g of Cear ai 2 Lrai Mhe2 PFGA IDov erD)

Preparation Methods	Method	Matrix	Method Descriptions
k un y heHA n%braMbioi of AoC2D	GHSWd	AGM4	Ni houDe: Ae, uei bbaCe%braMbioi Dq Ibh c Mebioi IbrIGvs ethai oCLt DhaYli g) n%braMbioi effIMei M al2e2 Lt bhe a22Ibioi of DaCDui 2er aM2IMMoi 2Ibioi D) O here reGEai bBli berferei MeDfrov MobRe%braMbe2 orgai IMDare rev oEe2 qIbh 2IDherDIEe MGai Ruh v e2la &2APnU) The e%braMbIDeIbher 2IQbe2 or Moi Mei brabe2 ai 2 e%Mhai ge2 li bo bhe ai aCtMaCDoGEei b)
Preharabioi for PFcA li qaber)	nPd31RPH	OcTnH	s ethio2 hreDuv eD2IreMbli véMbioi q Ibhoubq orYuh) Preharabioi li MQ2eDa22Ibioi of li beri aCDbai 2ar2 ai 2 DurrogabeBai 2 flGrabioi hrlor bo ai aCDID)
AoC2 PhaDe n%braMbioi &APnUfor PFcA li qaber	GHSWd	OcTnH	NiRhouDe: NDobohIMaCC GaLeGe2 ai aGgueDof bargebai aCbeDuDe2 aDli beri aCDbai 2ar2Dai 2 DurrogabeDare a22e2 bo bhe Dav hGe Moi bali er) The ei bre Moi bei bDare brai Dferre2 bo a DoC2 hhaDe e%braMbioi &APnUMarbrl2ge) The Dav hGe Moi bali er IDDuMMeDDIEeC rli De2 qIbh aC, uobDof bhe eQbioi DoGEei b) The eQbe2 e%braMbIDMov Lli e2 qIbh ai e, uaCEoQv e of reageibqaber ai 2 a horbioi IDflGere2 for ai aCDID) s ethio2 hroMe2ureDMoi forv bo x A momk As 5)3BbaLGe JR15 re, ulrev ei bD)

CHAIN OF CUSTODY

COC#: 37249 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: 0445_P01

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

EMAIL REPORTS TO:

EMAIL INVOICES TO:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_SW395_220509		09/05/2022 10:01 AM	Water	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2208629



Telephone : +61-3-8549 9600

[redacted]

Thursday, May 12, 2022 12:44:51 AM

CHAIN OF CUSTODY

COC#: 37249 *ALS Laboratory:* EM Melbourne

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: 0445_P01

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0445_SW395_220509	HDPE (no PTFE)	20 mL	00352101000893	Grey	No	
001	0445_SW395_220509	HDPE (no PTFE)	20 mL	00352101000740	Grey	No	

Total Bottle Count: ALS: 2, Non ALS: 0

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2208629**	Page	: 1 of 5
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
[redacted]	: [redacted]	[redacted]	: [redacted]
[redacted]	: [redacted]	[redacted]	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 12-May-2022 13:15
Order number	: -	Date Analysis Commenced	: 16-May-2022
C-O-C number	: 37249	Issue Date	: 19-May-2022 12:52
Sampler	: [redacted]		
Site	: 0445_P01		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW395_220509	----	----	----	----
				Sampling date / time	09-May-2022 10:01	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208629-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.06**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.04**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW395_220509	----	----	----	----
				Sampling date / time	09-May-2022 10:01	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208629-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.10**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.10**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.10**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.0**	----	----	----	----
13C8-PFOA	----	0.02	%		**101**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2208629**	Page	: 1 of 7
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	[redacted]	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0775_PFANUMP	Date Namples Received	: 12-May-2022
Urder number	: -	Date Analysis Commenced	: 16-May-2022
C-U-C number	: 4Œ279	Issue Date	: 19-May-2022
Nampler	: [redacted]		
Nite	: 0775_P01		
Quote number	: NY/149/19_Bandiana		
3o. of samples received	: 1		
3o. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALN. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DKP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Npike (LCN) Report; Recovery and Acceptance Limits
- Matrix Npike (MN) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Nenior Urganic Chemist	[redacted]

General Comments

The analytical procedures used by ALN have been developed from established internationally recognised procedures such as those published by the KNEPA, APHA, AN and 3 EPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LUR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LUR of a reported result differs from standard LUR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Sey : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAN 3 umber = CAN registry number from database maintained by Chemical Abstracts Nervices. The Chemical Abstracts Nervice is a division of the American Chemical Nociety.
LUR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALN Method QWI-E3/48 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LUR: 3 o Limit; Result between 10 and 20 times LUR: 0% - 50%; Result > 20 times LUR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Nample (LCN) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCN.

Nub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4341614)								
EP241X: Perfluorobutane sulfonic acid (PFBN)	4C5-C4-5	0.02	µg/L	<0.02	0.222 µg/L	98.8	C2.0	140
EP241X: Perfluoropentane sulfonic acid (PFPeN)	2C06-91-7	0.02	µg/L	<0.02	0.245 µg/L	98.8	C1.0	12C
EP241X: Perfluorohexane sulfonic acid (PFHxN)	455-76-7	0.01	µg/L	<0.01	0.228 µg/L	94.C	68.0	141
EP241X: Perfluoroheptane sulfonic acid (PFHpN)	4C5-92-8	0.02	µg/L	<0.02	0.25 µg/L	97.7	69.0	147
EP241X: Perfluorooctane sulfonic acid (PFUN)	1C64-24-1	0.01	µg/L	<0.01	0.242 µg/L	99.7	65.0	170
EP241X: Perfluorodecane sulfonic acid (PFDN)	445-CC-4	0.02	µg/L	<0.02	0.271 µg/L	107	54.0	172
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4341614)								
EP241X: Perfluorobutanoic acid (PFBA)	4C5-22-7	0.1	µg/L	<0.1	1.25 µg/L	92.0	C4.0	129
EP241X: Perfluoropentanoic acid (PFPeA)	2C06-90-4	0.02	µg/L	<0.02	0.25 µg/L	97.6	C2.0	129
EP241X: Perfluorohexanoic acid (PFHxA)	40C-27-7	0.02	µg/L	<0.02	0.25 µg/L	97.0	C2.0	129
EP241X: Perfluoroheptanoic acid (PFHpA)	4C5-85-9	0.02	µg/L	<0.02	0.25 µg/L	9C.0	C2.0	140
EP241X: Perfluorooctanoic acid (PFUA)	445-6C-1	0.01	µg/L	<0.01	0.25 µg/L	9C.C	C1.0	144
EP241X: Perfluorononanoic acid (PF3A)	4C5-95-1	0.02	µg/L	<0.02	0.25 µg/L	96.4	69.0	140
EP241X: Perfluorodecanoic acid (PFDA)	445-C6-2	0.02	µg/L	<0.02	0.25 µg/L	101	C1.0	129
EP241X: Perfluoroundecanoic acid (PFKnDA)	2058-97-8	0.02	µg/L	<0.02	0.25 µg/L	97.7	69.0	144
EP241X: Perfluorododecanoic acid (PFDoDA)	40C-55-1	0.02	µg/L	<0.02	0.25 µg/L	9C.2	C2.0	147
EP241X: Perfluorotridecanoic acid (PFTrDA)	C2629-97-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	177
EP241X: Perfluorotetradecanoic acid (PFTeDA)	4C6-06-C	0.05	µg/L	<0.05	0.625 µg/L	107	C1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4341614)								
EP241X: Perfluorooctane sulfonamide (FUNA)	C57-91-6	0.02	µg/L	<0.02	0.25 µg/L	107	6C.0	14C
EP241X: 3-Methyl perfluorooctane sulfonamide (MeFUNA)	41506-42-8	0.05	µg/L	<0.05	0.625 µg/L	105	68.0	171
EP241X: 3-Ethyl perfluorooctane sulfonamide (EtFUNA)	7151-50-2	0.05	µg/L	<0.05	0.625 µg/L	9C.5	C0.0	140
EP241X: 3-Methyl perfluorooctane sulfonamidoethanol (MeFUNE)	27778-09-C	0.05	µg/L	<0.05	0.625 µg/L	96.4	C0.0	140
EP241X: 3-Ethyl perfluorooctane sulfonamidoethanol (EtFUNE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	104	C0.0	140
EP241X: 3-Methyl perfluorooctane sulfonamidoacetic acid (MeFUNAA)	2455-41-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	146
EP241X: 3-Ethyl perfluorooctane sulfonamidoacetic acid (EtFUNAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	95.8	61.0	145
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341614)								
EP241X: 7:2 Fluorotelomer sulfonic acid (7:2 FTN)	C5C127-C2-7	0.05	µg/L	<0.05	0.247 µg/L	107	64.0	174
EP241X: 6:2 Fluorotelomer sulfonic acid (6:2 FTN)	2C619-9C-2	0.05	µg/L	<0.05	0.248 µg/L	108	67.0	170
EP241X: 8:2 Fluorotelomer sulfonic acid (8:2 FTN)	49108-47-7	0.05	µg/L	<0.05	0.27 µg/L	107	6C.0	148

Nub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4341614) - continued								
EP241X: 10:2 Fluorotelomer sulfonic acid (10:2 FTN)	120226-60-0	0.05	µg/L	<0.05	0.272 µg/L	102	C0.0	140
EP231P: PFAS Sums (QCLot: 4341614)								
EP241X: Num of PFAN	----	0.01	µg/L	<0.01	----	----	----	----
EP241X: Num of PFHxN and PFUN	455-76-7/1O 64-24-1	0.01	µg/L	<0.01	----	----	----	----
EP241X: Num of PFAN (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Npike (MN) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Ntatic Recovery Limits as per laboratory Data Quality Ubjectives (DQUs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2208629**	Page	: 1 of 4
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
[redacted]	[redacted]	Teleh6one	[redacted]
Pro\/ect	: I SC_j 449_PFJ AGMP	Date Aamhles Neceive2	: 1RdMaydRj RRR
Aite	: j 449_Pj 1	Ssue Date	: 10dMaydRj RRR
Aamhler	: [redacted]	Qo) of samhles receive2	: 1
Gr2er number	: d	Qo) of samhles analyse2	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Orief met6o2 summaries an2 references are also hrovi2e2 to assist in traceability)

Summary of Outliers

Outliers : Quality Control Samples

T6is rehort 6ig6lig6ts outliers flagge2 in t6e Wuality Control kWC&Nehort)

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Wuality Control Aamhle Tyhe	Count		Nate k%&		Wuality Control Ahecification
Met6o2	WC	Negular	J ctual	Exhecte2	
Laboratory Duhlicates kDYP&					
Perdan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	j	1;	j)j j	1j)j j	QEPM Rj 18 O8 7 J LA WC Atan2ar2
Matrix AhiUes kMA&					
Perdan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	j	1;	j)j j	9)j j	QEPM Rj 18 O8 7 J LA WC Atan2ar2

Analysis Holding Time Compliance

Sf samhles are i2entifie2 beloq as 6aving been analyse2 or extracte2 outsi2e of recommen2e2 6ol2ing timesBt6is s6oul2 be taUen into consi2eration q 6en interhreting results)

T6is rehort summarizes extraction w hreharation an2 analysis times an2 comhares eac6 qit6 J LA recommen2e2 6ol2ing times kreferencing YAEPJ AH 543B J Ph J B J A an2 QEPM& base2 on t6e samhle container hrovi2e2) Dates rehorte2 rehresent first 2ate of extraction or analysis an2 hreclu2e subse, uent 2ilutions an2 reruns) J listing of breac6es kif any&is hrovi2e2 6erein)

h ol2ing time for leac6ate met6o2s ke)g) TCLP& vary accor2ing to t6e analytes rehorte2) J ssessment comhares t6e leac6 2ate qit6 t6e s6ortest analyte 6ol2ing time for t6e e, uivalent soil met6o2) T6ese are: organics 14 2aysBmercury R5 2ays 7 ot6er metals 15j 2ays) J recor2e2 breac6 2oes not guarantee a breac6 for all nondvolatile harameters)

h ol2ing times for ***VOC in soils*** vary accor2ing to analytes of interest) I inyl C6lori2e an2 Atyrene 6ol2ing time is ; 2ays/ ot6ers 14 2ays) J recor2e2 breac6 2oes not guarantee a breac6 for all I GC analytes an2 s6oul2 be verifie2 in case t6e rehorte2 breac6 is a false hositive or I inyl C6lori2e an2 Atyrene are not Uey analytes of interestwconcern)

Matrix: **WATER** Evaluation: × = h ol2ing time breac6 / ✓ = H it6in 6ol2ing time)

Method / *Container* / *Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
j 449_AH 809_RRj 9j 0	**09-May-2022**	**17-May-2022**	j 9dQovdRj RR	✓	**17-May-2022**	j 9dQovdRj RR	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
j 449_AH 809_RRj 9j 0	**09-May-2022**	**17-May-2022**	j 9dQovdRj RR	✓	**17-May-2022**	j 9dQovdRj RR	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
j 449_AH 809_RRj 9j 0	**09-May-2022**	**17-May-2022**	j 9dQovdRj RR	✓	**17-May-2022**	j 9dQovdRj RR	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
j 449_AH 809_RRj 9j 0	**09-May-2022**	**17-May-2022**	j 9dQovdRj RR	✓	**17-May-2022**	j 9dQovdRj RR	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
j 449_AH 809_RRj 9j 0	**09-May-2022**	**17-May-2022**	j 9dQovdRj RR	✓	**17-May-2022**	j 9dQovdRj RR	✓

Quality Control Parameter Frequency Compliance

T6e folloq ing rehort summarises t6e fre, uency of laboratory WC samhles analyse2 q it6in t6e analytical lotks&in q 6ic6 t6e submitte2 samhleks&q askq ere&hrocesse2) J ctual rate s6oul2 be greater t6an or e, ual to t6e exhecte2 rate) J listing of breac6es is hrovi2e2 in t6e Aummary of Gutliers)

Matrix: **WATER**

Evaluation: × = Wuality Control fre, uency not q it6in shecification / ✓ = Wuality Control fre, uency q it6in shecification)

Wuality Control Aamhle Tyhe		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duhlicates kDYP&							
Perdan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPR81X	j	1;	**0.00**	**10.00**	×	QEPM Rj 18 O8 7 J LA WC Atan2ar2
Laboratory Control Aamhles kLCA&							
Perdan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPR81X	1	1;	**5.88**	**5.00**	✓	QEPM Rj 18 O8 7 J LA WC Atan2ar2
Met6o2 OlanUs kMO&							
Perdan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPR81X	1	1;	**5.88**	**5.00**	✓	QEPM Rj 18 O8 7 J LA WC Atan2ar2
Matrix AhiUes kMA&							
Perdan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPR81X	j	1;	**0.00**	**5.00**	×	QEPM Rj 18 O8 7 J LA WC Atan2ar2

Brief Method Summaries

T6e analytical hroce2ures use2 by t6e Environmental Division 6ave been 2evelohe2 from establis6e2 internationally recognize2 hroce2ures suc6 as t6ose hublis6e2 by t6e YA EPJ BJ Ph J BJ A an2 QEPM) Sn 6ouse 2evelohe2 hroce2ures are emhloye2 in t6e absence of 2ocumente2 stan2ar2s or by client re, uest) T6e folloq ing rehort hrovi2es brief 2escrihtions of t6e analytical hroce2ures emhloye2 for results rehorte2 in t6e Certificate of J nalysis) Aources from q 6ic6 J LA met6o2s 6ave been 2evelohe2 are hrovi2e2 q it6in t6e Met6o2 Descrihtions)

Analytical Methods	Method	Matrix	Method Descriptions
Perdan2 PolyfluoroalUyl Aubstances kPFJ A&by LCMAMA	EPR81X	H J TEN	Snd6ouse: J nalysis of fres6 an2 saline q aters by Aoli2 P6ase Extraction kAPE&folloq e2 by LCdElectroshrayd MAd MABQegative Mo2e using MNM an2 internal stan2ar2 , uantitation) Sotohically labelle2 analogues of target analytes use2 as internal stan2ar2s an2 surrogates are a22e2 to t6e samhle container) T6e entire contents are transferre2 to a soli2 h6ase extraction kAPE&cartri2ge) T6e samhle container is successively rinse2 q it6 ali, uots of t6e elution solvent) T6e elute2 extract is combine2 q it6 an e, ual volume of reagent q ater an2 a hortion is filtere2 for analysis) Met6o2 hroce2ures an2 2ata , uality ob\ectives conform to YA DoD WAM 9)8Btable Od19 re, uirements)

Preparation Methods	Method	Matrix	Method Descriptions
Aoli2 P6ase Extraction kAPE&for PFJ A in q ater	GNp ; R	H J TEN	Snd6ouse: Sotohically labelle2 analogues of target analytes use2 as internal stan2ar2s an2 surrogates are a22e2 to t6e samhle container) T6e entire contents are transferre2 to a soli2 h6ase extraction kAPE&cartri2ge) T6e samhle container is successively rinse2 q it6 ali, uots of t6e elution solvent) T6e elute2 extract is combine2 q it6 an e, ual volume of reagent q ater an2 a hortion is filtere2 for analysis) Met6o2 hroce2ures conform to YA DoD WAM 9)8Btable Od19 re, uirements)

CHAIN OF CUSTODY

ALS COC#: 37251 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: LANECON - CARDNO VICTORIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: 0445_Bandiana Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2021LANECON0009

EMAIL REPORTS TO:

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS: 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_MW016_220509		09/05/2022 09:11 AM	Water	ALS: 2 Non ALS: 0	No		X		
002	0445_QC308_220509		11/05/2022 01:22 PM	Water	ALS: 2 Non ALS: 0	No		X		
003	0445_QC504_220509		11/05/2022 01:22 PM	Water	ALS: 2 Non ALS: 0	Yes	-			

Environmental Division
Melbourne
Work Order Reference
EM2208649

Telephone : 61-3-9549 9600

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2208649**	Page	: 1 of 5
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
[redacted]	: [redacted]	[redacted]	: [redacted]
[redacted]	: [redacted]	[redacted]	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0447_PFASOMP	Date Samples Received	: 12-May-2022 13:17
Order number	: -	Date Analysis Commenced	: 16-May-2022
C-O-C number	: 35271	Issue Date	: 18-May-2022 18:24
Sampler	: [redacted]		
Site	: 0447_Bandiana Base		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 3		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 127ml bottles have been tested in accordance with the QSM7.3 compliant, NATA accredited method. 60mL or 270mL bottles have been tested to the legacy QSM 7.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 70-170% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 7.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW016_220509	----	----	----	----
			Sampling date / time	09-May-2022 09:11	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2208649-001	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	357-53-7	0.02	µg/L	**0.45**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2506-91-4	0.02	µg/L	**0.42**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	377-46-4	0.01	µg/L	**3.22**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	357-92-8	0.02	µg/L	**0.27**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1563-23-1	0.01	µg/L	**6.14**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	337-55-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	357-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2506-90-3	0.02	µg/L	**0.16**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	305-24-4	0.02	µg/L	**0.61**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	357-87-9	0.02	µg/L	**0.16**	----	----	----	----
Perfluorooctanoic acid (PFOA)	337-65-1	0.01	µg/L	**0.33**	----	----	----	----
Perfluorononanoic acid (PFNA)	357-97-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	337-56-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2078-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	305-77-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	52629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	356-06-5	0.07	µg/L	<0.07	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	574-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31706-32-8	0.07	µg/L	<0.07	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4171-70-2	0.07	µg/L	<0.07	----	----	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW016_220509	----	----	----	----
				Sampling date / time	09-May-2022 09:11	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208649-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-5	0.07	µg/L		<0.07	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.07	µg/L		<0.07	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2377-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-70-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	575124-52-4	0.07	µg/L		<0.07	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	25619-95-2	0.07	µg/L		<0.07	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.07	µg/L		<0.07	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.07	µg/L		<0.07	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**11.8**	----	----	----	----
Sum of PFHxS and PFOS	377-46-4/1563-23-1	0.01	µg/L		**9.36**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**11.1**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.2**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.9**	----	----	----	----

Analytical Results

Sub-Matrix: **RINSATE** (Matrix: **WATER**)			Sample ID	0445_QC308_220509	----	----	----	----
			Sampling date / time	11-May-2022 13:22	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EM2208649-002**	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	357-53-7	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2506-91-4	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	377-46-4	0.01	µg/L	<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	357-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1563-23-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	337-55-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	357-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2506-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	305-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	357-87-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	337-65-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	357-97-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	337-56-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2078-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	305-77-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	52629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	356-06-5	0.07	µg/L	<0.07	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	574-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31706-32-8	0.07	µg/L	<0.07	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4171-70-2	0.07	µg/L	<0.07	----	----	----	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)				Sample ID	0445_QC308_220509	----	----	----	----
				Sampling date / time	11-May-2022 13:22	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2208649-002	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-5	0.07	µg/L		<0.07	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.07	µg/L		<0.07	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2377-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-70-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	575124-52-4	0.07	µg/L		<0.07	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	25619-95-2	0.07	µg/L		<0.07	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.07	µg/L		<0.07	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.07	µg/L		<0.07	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	377-46-4/1563-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		108	----	----	----	----
13C8-PFOA	----	0.02	%		94.6	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	67	140
13C8-PFOA	----	51	133

Sub-Matrix: **RINSATE**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	67	140
13C8-PFOA	----	51	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2208649**	Page	: 1 of 7
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Teleh- one	: ----	Teleh- one	: [redacted]
Project	: VIC_0pp5_PFANUMP	Date Namhles Received	: 12-May-2022
Urder number	: -	Date Analysis Commenced	: 17-May-2022
C-U-C number	: 4Œ251	Issue Date	: 18-May-2022
Namhler	: [redacted]		
Nite	: 0pp5_Bandiana Base		
Quote number	: NY/149/19_Bandiana		
3o. of samhles received	: 4		
3o. of samhles analysed	: 2		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

T- is rehort suhersedes any hrevious rehort(s) wit- t- is reference. Results ahhly to t- e samhle(s) as submitted, unless t- e samhling was conducted by ALN. T- is document s- all not be rehroduced, exceht in full.

T- is Quality Control Rehort contains t- e following information:

- Laboratory Duhlicate (DKP) Rehort; Relative Percentage Difference (RPD) and Accehtance Limits
- Met- od Blank (MB) and Laboratory Control Nhike (LCN) Rehort; Recovery and Accehtance Limits
- Matrix Nhike (MN) Rehort; Recovery and Accehtance Limits

Signatories

T- is document - as been electronically signed by t- e aut- orized signatories below. Electronic signing is carried out in comhliance wit- hrocedures shecified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Nenior Urganic C- emist	[redacted]

General Comments

T- e analytical hrocedures used by ALN - ave been develohed from establis- ed internationally recognised hrocedures suc- as t- ose hublis- ed by t- e KNEPA, APHA, AN and 3 EPM. In - ouse develohed hrocedures are fully validated and are often at t- e client request.

W- ere moisture determination - as been herformed, results are rehorted on a dry weig- t basis.

W- ere a rehorted less t- an (<) result is - ig- er t- an t- e LUR, t- is may be due to hrimary samhle extract/digestate dilution and/or insufficient samhle for analysis. W- ere t- e LUR of a rehorted result differs from standard LUR, t- is may be due to - ig- moisture content, insufficient samhle (reduced weig- t emhloyed) or matrix interference.

Sey : Anonymous = Refers to samhles w- ic- are not shecifically hart of t- is work order but formed hart of t- e QC hrocess lot
CAN 3 umber = CAN registry number from database maintained by C- emical Abstracts Nervices. T- e C- emical Abstracts Nervice is a division of t- e American C- emical Nociety.
LUR = Limit of rehorting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

T- e quality control term Laboratory Duhlicate refers to a randomly selected intralaboratory shlit. Laboratory duhlicates hrovide information regarding met- od hrecision and samhle - eterogeneity. T- e hermitted ranges for t- e Relative Percent Deviation (RPD) of Laboratory Duhlicates are shecified in ALN Met- od QWI -E3 /48 and are dehendent on t- e magnitude of results in comharison to t- e level of rehorting: Result < 10 times LUR: 3 o Limit; Result between 10 and 20 times LUR: 0% - 50%; Result > 20 times LUR: 0% - 20%.

Nub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4340663)									
EM2208481-048	Anonymous	EP241X: Perfluoro- exane sulfonic acid (PFHxN)	455-p7-p	0.01	µg/L	<0.01	<0.01	0.0	3 o Limit
		EP241X: Perfluorooctane sulfonic acid (PFUN)	1O74-24-1	0.01	µg/L	<0.01	<0.01	0.0	3 o Limit
		EP241X: Perfluorobutane sulfonic acid (PFBN)	4O5-O4-5	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluorohentane sulfonic acid (PFPeN)	2O07-91-p	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluoro- ehtane sulfonic acid (PFHhN)	4O5-92-8	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluorodecane sulfonic acid (PFDN)	445-CO-4	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4340663)									
EM2208481-048	Anonymous	EP241X: Perfluorooctanoic acid (PFUA)	445-7O-1	0.01	µg/L	<0.01	<0.01	0.0	3 o Limit
		EP241X: Perfluorohentanoic acid (PFPeA)	2O07-90-4	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluoro- exanoic acid (PFHxA)	40O-2p-p	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluoro- ehtanoic acid (PFHhA)	4O5-85-9	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluorononanoic acid (PF3 A)	4O5-95-1	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluorodecanoic acid (PFDA)	445-O7-2	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluoroundecanoic acid (PFKnDA)	2058-9p-8	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluorododecanoic acid (PFDoDA)	40O-55-1	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluorotridecanoic acid (PFTrDA)	O2729-9p-8	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: Perfluorotetradecanoic acid (PFTeDA)	4O7-07-O	0.05	µg/L	<0.05	<0.05	0.0	3 o Limit
		EP241X: Perfluorobutanoic acid (PFBA)	4O5-22-p	0.1	µg/L	<0.1	<0.1	0.0	3 o Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340663)									
EM2208481-048	Anonymous	EP241X: Perfluorooctane sulfonamide (FUNA)	O5p-91-7	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: 3 -Met- yl herfluorooctane sulfonamidoacetic acid (MeFUNAA)	2455-41-9	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit
		EP241X: 3 -Et- yl herfluorooctane sulfonamidoacetic acid (EtFUNAA)	2991-50-7	0.02	µg/L	<0.02	<0.02	0.0	3 o Limit

Nub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4340663) - continued									
EM2208481-048	Anonymous	EP241X: 3-Met-yl herfluorooctane sulfonamide (MeFUNA)	41507-42-8	0.05	µg/L	<0.05	<0.05	0.0	3o Limit
		EP241X: 3-Et-yl herfluorooctane sulfonamide (EtFUNA)	p151-50-2	0.05	µg/L	<0.05	<0.05	0.0	3o Limit
		EP241X: 3-Met-yl herfluorooctane sulfonamidoet-anol (MeFUNE)	2ppp8-09-O	0.05	µg/L	<0.05	<0.05	0.0	3o Limit
		EP241X: 3-Et-yl herfluorooctane sulfonamidoet-anol (EtFUNE)	1791-99-2	0.05	µg/L	<0.05	<0.05	0.0	3o Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4340663)									
EM2208481-048	Anonymous	EP241X: p:2 Fluorotelomer sulfonic acid (p:2 FTN)	C5O12p-O2-p	0.05	µg/L	<0.05	<0.05	0.0	3o Limit
		EP241X: 7:2 Fluorotelomer sulfonic acid (7:2 FTN)	2O719-9O-2	0.05	µg/L	<0.05	<0.05	0.0	3o Limit
		EP241X: 8:2 Fluorotelomer sulfonic acid (8:2 FTN)	49108-4p-p	0.05	µg/L	<0.05	<0.05	0.0	3o Limit
		EP241X: 10:2 Fluorotelomer sulfonic acid (10:2 FTN)	120227-70-0	0.05	µg/L	<0.05	<0.05	0.0	3o Limit
EP231P: PFAS Sums (QC Lot: 4340663)									
EM2208481-048	Anonymous	EP241X: Num of PFAN	----	0.01	µg/L	<0.01	<0.01	0.0	3o Limit
		EP241X: Num of PFHxN and PFUN	455-p7-p/1O74-24-1	0.01	µg/L	<0.01	<0.01	0.0	3o Limit
		EP241X: Num of PFAN (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	3o Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

T- e quality control term Met- od / Laboratory Blank refers to an analyte free matrix to w- ic- all reagents are added in t- e same volumes or hrohortions as used in standard samhle hreharation. T- e hurhose of t- is QC harameter is to monitor hotential laboratory contamination. T- e quality control term Laboratory Control Namhle (LCN) refers to a certified reference material, or a known interference free matrix shiked wit- target analytes. T- e hurhose of t- is QC harameter is to monitor met- od hrecision and accuracy indehendent of samhle matrix. Dynamic Recovery Limits are based on statistical evaluation of hrocessed LCN.

Nub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340663)								
EP241X: Perfluorobutane sulfonic acid (PFBN)	4O5-O4-5	0.02	µg/L	<0.02	0.222 µg/L	94.9	O2.0	140
EP241X: Perfluorohentane sulfonic acid (PFPeN)	2O07-91-p	0.02	µg/L	<0.02	0.245 µg/L	102	O1.0	12O
EP241X: Perfluoro- exane sulfonic acid (PFHxN)	455-p7-p	0.01	µg/L	<0.01	0.228 µg/L	104	78.0	141
EP241X: Perfluoro- ehtane sulfonic acid (PFHhN)	4O5-92-8	0.02	µg/L	<0.02	0.25 µg/L	9p.0	79.0	14p
EP241X: Perfluorooctane sulfonic acid (PFUN)	1O74-24-1	0.01	µg/L	<0.01	0.242 µg/L	94.2	75.0	1p0
EP241X: Perfluorodecane sulfonic acid (PFDN)	445-CO-4	0.02	µg/L	<0.02	0.2p1 µg/L	95.7	54.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340663)								
EP241X: Perfluorobutanoic acid (PFBA)	4O5-22-p	0.1	µg/L	<0.1	1.25 µg/L	9p.7	O4.0	129
EP241X: Perfluorohentanoic acid (PFPeA)	2O07-90-4	0.02	µg/L	<0.02	0.25 µg/L	10O	O2.0	129
EP241X: Perfluoro- exanoic acid (PFHxA)	40O-2p-p	0.02	µg/L	<0.02	0.25 µg/L	89.2	O2.0	129
EP241X: Perfluoro- ehtanoic acid (PFHhA)	4O5-85-9	0.02	µg/L	<0.02	0.25 µg/L	107	O2.0	140
EP241X: Perfluorooctanoic acid (PFUA)	445-7O-1	0.01	µg/L	<0.01	0.25 µg/L	105	O1.0	144
EP241X: Perfluorononanoic acid (PF3A)	4O5-95-1	0.02	µg/L	<0.02	0.25 µg/L	108	79.0	140
EP241X: Perfluorodecanoic acid (PFDA)	445-O7-2	0.02	µg/L	<0.02	0.25 µg/L	90.9	O1.0	129
EP241X: Perfluoroundecanoic acid (PFKnDA)	2058-9p-8	0.02	µg/L	<0.02	0.25 µg/L	102	79.0	144
EP241X: Perfluorododecanoic acid (PFDoDA)	40O-55-1	0.02	µg/L	<0.02	0.25 µg/L	10p	O2.0	14p
EP241X: Perfluorotridecanoic acid (PFTrDA)	O2729-9p-8	0.02	µg/L	<0.02	0.25 µg/L	9p.8	75.0	1pp
EP241X: Perfluorotetradecanoic acid (PFTeDA)	4O7-07-O	0.05	µg/L	<0.05	0.725 µg/L	105	O1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663)								
EP241X: Perfluorooctane sulfonamide (FUNA)	O5p-91-7	0.02	µg/L	<0.02	0.25 µg/L	98.9	7O.0	14O
EP241X: 3 -Met- yl herfluorooctane sulfonamide (MeFUNA)	41507-42-8	0.05	µg/L	<0.05	0.725 µg/L	89.0	78.0	1p1
EP241X: 3 -Et- yl herfluorooctane sulfonamide (EtFUNA)	p151-50-2	0.05	µg/L	<0.05	0.725 µg/L	112	O0.0	140
EP241X: 3 -Met- yl herfluorooctane sulfonamidoet- anol (MeFUNE)	2ppp8-09-O	0.05	µg/L	<0.05	0.725 µg/L	92.9	O0.0	140
EP241X: 3 -Et- yl herfluorooctane sulfonamidoet- anol (EtFUNE)	1791-99-2	0.05	µg/L	<0.05	0.725 µg/L	94.p	O0.0	140
EP241X: 3 -Met- yl herfluorooctane sulfonamidoacetic acid (MeFUNAA)	2455-41-9	0.02	µg/L	<0.02	0.25 µg/L	10O	75.0	147
EP241X: 3 -Et- yl herfluorooctane sulfonamidoacetic acid (EtFUNAA)	2991-50-7	0.02	µg/L	<0.02	0.25 µg/L	108	71.0	145
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340663)								
EP241X: p:2 Fluorotelomer sulfonic acid (p:2 FTN)	O5O12p-O2-p	0.05	µg/L	<0.05	0.24p µg/L	111	74.0	1p4
EP241X: 7:2 Fluorotelomer sulfonic acid (7:2 FTN)	2O719-9O-2	0.05	µg/L	<0.05	0.248 µg/L	108	7p.0	1p0
EP241X: 8:2 Fluorotelomer sulfonic acid (8:2 FTN)	49108-4p-p	0.05	µg/L	<0.05	0.2p µg/L	115	7O.0	148

Nub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340663) - continued								
EP241X: 10:2 Fluorotelomer sulfonic acid (10:2 FTN)	120227-70-0	0.05	µg/L	<0.05	0.2p2 µg/L	94.9	C0.0	140
EP231P: PFAS Sums (QCLot: 4340663)								
EP241X: Num of PFAN	----	0.01	µg/L	<0.01	----	----	----	----
EP241X: Num of PFHxN and PFUN	455-p7-p/1O 74-24-1	0.01	µg/L	<0.01	----	----	----	----
EP241X: Num of PFAN (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

T-e quality control term Matrix Nhike (MN) refers to an intralaboratory shlit samhle shiked wit- a rehresentative set of target analytes. T-e hurhose of t-is QC harameter is to monitor hotential matrix effects on analyte recoveries. Ntatic Recovery Limits as her laboratory Data Quality Ubjectives (DQUs). Ideal recovery ranges stated may be waived in t-e event of samhle matrix interference.

Nub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4340663)							
EM2208481-050	Anonymous	EP241X: Perfluorobutane sulfonic acid (PFBN)	4O5-O4-5	0.222 µg/L	119	O2.0	140
		EP241X: Perfluorohentane sulfonic acid (PFPeN)	2O07-91-p	0.245 µg/L	108	O1.0	12O
		EP241X: Perfluoro- exane sulfonic acid (PFHxN)	455-p7-p	0.228 µg/L	127	78.0	141
		EP241X: Perfluoro- ehtane sulfonic acid (PFHhN)	4O5-92-8	0.248 µg/L	101	79.0	14p
		EP241X: Perfluorooctane sulfonic acid (PFUN)	1O74-24-1	0.242 µg/L	99.p	75.0	1p0
		EP241X: Perfluorodecane sulfonic acid (PFDN)	445-CO-4	0.2p1 µg/L	91.p	54.0	1p2
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4340663)							
EM2208481-050	Anonymous	EP241X: Perfluorobutanoic acid (PFBA)	4O5-22-p	1.25 µg/L	Op.2	O4.0	129
		EP241X: Perfluorohentanoic acid (PFPeA)	2O07-90-4	0.25 µg/L	115	O2.0	129
		EP241X: Perfluoro- exanoic acid (PFHxA)	40O-2p-p	0.25 µg/L	91.p	O2.0	129
		EP241X: Perfluoro- ehtanoic acid (PFHhA)	4O5-85-9	0.25 µg/L	108	O2.0	140
		EP241X: Perfluorooctanoic acid (PFUA)	445-7O-1	0.25 µg/L	10O	O1.0	144
		EP241X: Perfluorononanoic acid (PF3 A)	4O5-95-1	0.25 µg/L	109	79.0	140
		EP241X: Perfluorodecanoic acid (PFDA)	445-O7-2	0.25 µg/L	85.0	O1.0	129
		EP241X: Perfluoroundecanoic acid (PFKnDA)	2058-9p-8	0.25 µg/L	95.0	79.0	144
		EP241X: Perfluorododecanoic acid (PFDoDA)	40O-55-1	0.25 µg/L	101	O2.0	14p
		EP241X: Perfluorotridecanoic acid (PFTrDA)	O2729-9p-8	0.25 µg/L	87.4	75.0	1pp
		EP241X: Perfluorotetradecanoic acid (PFTeDA)	4O7-07-O	0.725 µg/L	98.2	O1.0	142
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663)							
EM2208481-050	Anonymous	EP241X: Perfluorooctane sulfonamide (FUNA)	O5p-91-7	0.25 µg/L	95.0	7O.0	14O
		EP241X: 3 -Met- yl herfluorooctane sulfonamide (MeFUNA)	41507-42-8	0.725 µg/L	82.2	78.0	1p1
		EP241X: 3 -Et- yl herfluorooctane sulfonamide (EtFUNA)	p151-50-2	0.725 µg/L	89.2	C0.0	140

Nub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4340663) - continued							
EM2208481-050	Anonymous	EP241X: 3-Met-yl herfluorooctane sulfonamidoet-anol (MeFUNE)	2ppp8-09-O	0.725 µg/L	97.5	C0.0	140
		EP241X: 3-Et-yl herfluorooctane sulfonamidoet-anol (EtFUNE)	1791-99-2	0.725 µg/L	9p.1	C0.0	140
		EP241X: 3-Met-yl herfluorooctane sulfonamidoacetic acid (MeFUNAA)	2455-41-9	0.25 µg/L	104	75.0	147
		EP241X: 3-Et-yl herfluorooctane sulfonamidoacetic acid (EtFUNAA)	2991-50-7	0.25 µg/L	100	71.0	145
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4340663)							
EM2208481-050	Anonymous	EP241X: p:2 Fluorotelomer sulfonic acid (p:2 FTN)	C5C12p-C2-p	0.24p µg/L	112	74.0	1p4
		EP241X: 7:2 Fluorotelomer sulfonic acid (7:2 FTN)	2C719-9C-2	0.248 µg/L	114	7p.0	1p0
		EP241X: 8:2 Fluorotelomer sulfonic acid (8:2 FTN)	49108-4p-p	0.2p µg/L	107	7C.0	148
		EP241X: 10:2 Fluorotelomer sulfonic acid (10:2 FTN)	120227-70-0	0.2p2 µg/L	C2.p	C0.0	140

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2208649**	Page	: 1 of 4
Client	: **DONT NOT USE - LOG UNDER MWHAUS**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 12-May-2022
Site	: 0445_Bandiana Base	Issue Date	: 18-May-2022
Sampler	: [redacted]	No. of samples received	: 3
Order number	: -	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	19	5.26	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0445_MW016_220509	**09-May-2022**	**16-May-2022**	05-Nov-2022	✓	**16-May-2022**	05-Nov-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC308_220509	**11-May-2022**	**16-May-2022**	07-Nov-2022	✓	**16-May-2022**	07-Nov-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0445_MW016_220509	**09-May-2022**	**16-May-2022**	05-Nov-2022	✓	**16-May-2022**	05-Nov-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC308_220509	**11-May-2022**	**16-May-2022**	07-Nov-2022	✓	**16-May-2022**	07-Nov-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0445_MW016_220509	**09-May-2022**	**16-May-2022**	05-Nov-2022	✓	**16-May-2022**	05-Nov-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC308_220509	**11-May-2022**	**16-May-2022**	07-Nov-2022	✓	**16-May-2022**	07-Nov-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0445_MW016_220509	**09-May-2022**	**16-May-2022**	05-Nov-2022	✓	**16-May-2022**	05-Nov-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC308_220509	**11-May-2022**	**16-May-2022**	07-Nov-2022	✓	**16-May-2022**	07-Nov-2022	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0445_MW016_220509	**09-May-2022**	**16-May-2022**	05-Nov-2022	✓	**16-May-2022**	05-Nov-2022	✓
HDPE (no PTFE) (EP231X) 0445_QC308_220509	**11-May-2022**	**16-May-2022**	07-Nov-2022	✓	**16-May-2022**	07-Nov-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

eurofins | Environment Testing

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521
Melbourne [redacted]
Sydney [redacted]
Brisbane [redacted]
Newcastle [redacted]

[redacted]
Eurofins ARL Pty Ltd
ABN: 91 05 0159 898
Perth [redacted]

[redacted]
Eurofins Environment Testing NZ Limited
NZBN: 9429046024954
Auckland [redacted]
Christchurch [redacted]

Sample Receipt Advice

Company name:	Cardno Victoria Pty Ltd
Contact name:	[redacted]
Project name:	BANDIANA
Project ID:	DE19008
Turnaround time:	5 Day
Date/Time received	May 9, 2022 4:20 PM
Eurofins reference	886780

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted]

Results will be delivered electronically via email to [redacted]

Note: A copy of these results will also be delivered to the general Cardno Victoria Pty Ltd email address.

Global Leader - Results you can trust

Cardno
now
Stantec

Chain of Custody

Sheet 1 of 1

PM Name: [redacted]
Phone: Fax: 03 9808 3511 Mobile: [redacted]
Address: [redacted]
PM Email: [redacted]
Project Number: DEF19008 Site: BANJOTANA
Laboratory (name, phone,fax no & contact person)
Eurofins

Sample ID	Laboratory ID	Container	Sampling Date	Sampling Time	Sample Matrix: Water	Sample Matrix: Soil/sediment	Sample preservation: Ice/Ice bricks	Analysis: PFAS full suite (28)	Hold
0445_QC200_220503	1	x2	3/5		X		X	X	
0445_QC201_220503	2	x2	3/5		X		X	X	
0445_QC202_220503	3	x2	3/5		X		X		X
0445_QC203_220504	4	x2	4/5		X		X	X	
0445_QC204_220504	5	x2	4/5		X		X	X	
0445_QC205_220505	6	x2	5/5		X		X	X	
0445_QC206_220505	7	x2	5/5		X		X	X	
0445_QC207_220504	8	x2	4/5		X		X	X	
0445_QC208_220505	9	x2	5/5		X		X		X
0445_QC209_220504	10	x1	4/5			X	X	X	
0445_QC210_220504	11	x1	4/5			X	X	X	
0445_QC211_220506	12	x2	6/5		X		X	X	
0445_QC502_220506	13	x2	6/5		X		X		X

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples. Sampler name: (print and signature) [redacted] Date: 7/5

Relinquished by: Sampler): (print and signature)	Date	Time	Date	Time
[redacted]	7/5			
Relinquished by: (print and signature)	Date	Time	Date	Time
Relinquished by: (print and signature)	Date	Time	Date	Time

886780
Dayen

Please supply results electronically in spreadsheet and ESDAT files.
Turn around time: (24 hour/48 hour/3 days/5 days) Please circle

9/5 4.20
Chilled: Yes/ No Cooler
Temp: 9.4 -0.1 Tw
Correction: -0.3
Final Temp: 9.3

Cardno Victoria Pty Ltd
[redacted]

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **886780-W**
Project name BANDIANA
Project ID DE19008
Received Date May 09, 2022

Client Sample ID			0445_QC200_220503	0445_QC201_220503	0445_QC203_220504	0445_QC204_220504
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0020732	M22-My0020733	M22-My0020734	M22-My0020735
Date Sampled			May 03, 2022	May 03, 2022	May 04, 2022	May 04, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.04	0.02
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.04	0.02
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.02	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.03	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	99	104	124	110
13C5-PFPeA (surr.)	1	%	113	89	112	107
13C5-PFHxA (surr.)	1	%	88	88	121	95
13C4-PFHpA (surr.)	1	%	70	77	142	84
13C8-PFOA (surr.)	1	%	58	69	124	75
13C5-PFNA (surr.)	1	%	70	70	128	78
13C6-PFDA (surr.)	1	%	59	64	105	61
13C2-PFUnDA (surr.)	1	%	80	47	82	48
13C2-PFDoDA (surr.)	1	%	63	43	75	46
13C2-PFTeDA (surr.)	1	%	44	16	43	18
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	93	63	114	67
D3-N-MeFOSA (surr.)	1	%	17	41	58	42

Client Sample ID			0445_QC200_220503	0445_QC201_220503	0445_QC203_220504	0445_QC204_220504
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0020732	M22-My0020733	M22-My0020734	M22-My0020735
Date Sampled			May 03, 2022	May 03, 2022	May 04, 2022	May 04, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	23	42	58	43
D7-N-MeFOSE (surr.)	1	%	56	47	73	51
D9-N-EtFOSE (surr.)	1	%	40	39	60	36
D5-N-EtFOSAA (surr.)	1	%	67	29	43	26
D3-N-MeFOSAA (surr.)	1	%	75	22	50	31
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	0.01	0.03	0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.02	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.02	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.01	[N09]0.06	[N09]0.13	[N09]0.05
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.01	[N09]0.04	[N09]0.54	[N09]0.27
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	96	94	126	102
18O2-PFHxS (surr.)	1	%	76	78	140	89
13C8-PFOS (surr.)	1	%	63	62	121	65
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	84	45	134	62
13C2-6:2 FTSA (surr.)	1	%	75	48	95	47
13C2-8:2 FTSA (surr.)	1	%	84	59	133	68
13C2-10:2 FTSA (surr.)	1	%	34	25	61	29
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.02	0.1	0.67	0.32
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.01	0.04	0.57	0.27
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.02	0.1	0.7	0.32
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	0.11	0.83	0.37
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	0.11	0.87	0.37

Client Sample ID			0445_QC205_220505	0445_QC206_220505	0445_QC207_220504	0445_QC211_220506
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0020736	M22-My0020737	M22-My0020738	M22-My0020741
Date Sampled			May 05, 2022	May 05, 2022	May 04, 2022	May 06, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.14
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.05	< 0.01	0.19
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	[N09]0.20	< 0.01	0.88
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	[N09]0.04	< 0.01	[N09]0.07
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	[N09]0.09	< 0.01	[N09]0.21
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	100	98	102	135
13C5-PFPeA (surr.)	1	%	96	104	118	94
13C5-PFHxA (surr.)	1	%	84	88	88	77
13C4-PFHpA (surr.)	1	%	69	74	70	71
13C8-PFOA (surr.)	1	%	58	64	62	64
13C5-PFNA (surr.)	1	%	61	73	58	72
13C6-PFDA (surr.)	1	%	51	71	60	64
13C2-PFUnDA (surr.)	1	%	45	76	53	61
13C2-PFDoDA (surr.)	1	%	40	75	51	60
13C2-PFTeDA (surr.)	1	%	15	45	20	26
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	66	111	68	71
D3-N-MeFOSA (surr.)	1	%	41	20	61	60
D5-N-EtFOSA (surr.)	1	%	40	22	61	69
D7-N-MeFOSE (surr.)	1	%	42	56	93	96
D9-N-EtFOSE (surr.)	1	%	37	56	66	73
D5-N-EtFOSAA (surr.)	1	%	18	46	25	27
D3-N-MeFOSAA (surr.)	1	%	19	12	30	26
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	0.14	< 0.01	0.91
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	0.06	< 0.01	0.54
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	[N09]0.15	< 0.01	[N09]0.75
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.02	[N09]1.2	[N09]0.06	[N09]6.4
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	[N09]0.06	< 0.01	[N09]0.28
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.04	[N09]2.1	[N09]0.10	[N09]4.9
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			0445_QC205_220505	0445_QC206_220505	0445_QC207_220504	0445_QC211_220506
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0020736	M22-My0020737	M22-My0020738	M22-My0020741
Date Sampled			May 05, 2022	May 05, 2022	May 04, 2022	May 06, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	87	100	95	83
18O2-PFHxS (surr.)	1	%	75	91	66	96
13C8-PFOS (surr.)	1	%	56	50	57	89
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	43	92	43	39
13C2-6:2 FTSA (surr.)	1	%	36	77	29	25
13C2-8:2 FTSA (surr.)	1	%	58	72	56	58
13C2-10:2 FTSA (surr.)	1	%	25	80	33	40
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.06	3.3	0.16	11.3
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.04	2.19	0.1	5.11
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.06	3.39	0.16	11.51
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.06	3.82	0.16	13.7
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	4.09	0.16	15.27

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	May 10, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	May 10, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	May 10, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	May 10, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	May 09, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521
Melbourne [redacted] Sydney [redacted] Brisbane [redacted] Newcastle [redacted]

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898
Perth [redacted]

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954
Auckland [redacted] Christchurch [redacted]

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone: [redacted]
Fax [redacted]

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	0445_QC200_220503	May 03, 2022		Water	M22-My0020732			X
2	0445_QC201_220503	May 03, 2022		Water	M22-My0020733			X
3	0445_QC203_220504	May 04, 2022		Water	M22-My0020734			X
4	0445_QC204_220504	May 04, 2022		Water	M22-My0020735			X
5	0445_QC205_220505	May 05, 2022		Water	M22-My0020736			X
6	0445_QC206_	May 05, 2022		Water	M22-			X

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521
Melbourne [redacted] Sydney [redacted] Brisbane [redacted] Newcastle [redacted]

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898
Perth [redacted]0

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954
Auckland [redacted] Christchurch [redacted]

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]
Melbourne
VIC 3000

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone: [redacted]
Fax:

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager [redacted]

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
	220505				My0020737			
7	0445_QC207_220504	May 04, 2022		Water	M22-My0020738			X
8	0445_QC209_220504	May 04, 2022		Soil	M22-My0020739		X	X
9	0445_QC210_220504	May 04, 2022		Soil	M22-My0020740		X	X
10	0445_QC211_220506	May 06, 2022		Water	M22-My0020741			X
11	0445_QC202_220503	May 03, 2022		Water	M22-My0020742	X		
12	0445_QC208_220505	May 05, 2022		Water	M22-My0020743	X		

eurofins | Environment Testing

web: www.eurofins.com.au

[redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne [redacted]
Sydney [redacted]
Brisbane [redacted]
Newcastle [redacted]

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth [redacted]

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland [redacted]
Christchurch [redacted]

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone: [redacted]
Fax: [redacted]

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
13	0445_QC2502_220506	May 06, 2022		Water	M22-My0020744	X		
Test Counts						3	2	10

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	87			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	103			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	104			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	113			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	113			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	108			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	113			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	124			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	98			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	100			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	84			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	92			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	97			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	55			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	115			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	116			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	53			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	85			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	109			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	119			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	120			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	120			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	102			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	65			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	130			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	136			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	147			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	98			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M22-My0024318	NCP	%	125			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M22-My0024318	NCP	%	80			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M22-My0024318	NCP	%	114			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-My0024318	NCP	%	118			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M22-My0024318	NCP	%	126			50-150	Pass	
Perfluorononanoic acid (PFNA)	M22-My0024318	NCP	%	115			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M22-My0024318	NCP	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-My0024318	NCP	%	131			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-My0024318	NCP	%	116			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-My0024318	NCP	%	109			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-My0024318	NCP	%	121			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M22-My0024318	NCP	%	94			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-My0024318	NCP	%	136			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-My0024318	NCP	%	112			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-My0024318	NCP	%	61			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-My0024318	NCP	%	126			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-My0024318	NCP	%	90			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M22-My0024318	NCP	%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-My0024318	NCP	%	94			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-My0024318	NCP	%	120			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-My0024318	NCP	%	112			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-My0024318	NCP	%	119			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-My0024318	NCP	%	117			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-My0024318	NCP	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-My0024318	NCP	%	99			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-My0024318	NCP	%	146			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-My0024318	NCP	%	121			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-My0024318	NCP	%	130			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-My0024318	NCP	%	106			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M22-My0023194	NCP	ug/L	0.01	0.02	14	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M22-My0023194	NCP	ug/L	0.03	0.03	2.0	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-My0023194	NCP	ug/L	0.18	0.17	5.0	30%	Pass	
Perfluorooctanoic acid (PFOA)	M22-My0023194	NCP	ug/L	1.5	1.3	8.0	30%	Pass	
Perfluorononanoic acid (PFNA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-My0023194	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-My0023194	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS
[redacted] Senior Analyst-PFAS



[redacted]
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Cardno Victoria Pty Ltd
[redacted]

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **886780-S**
Project name BANDIANA
Project ID DE19008
Received Date May 09, 2022

Client Sample ID			**0445_QC209_220504**	**0445_QC210_220504**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M22-My0020739**	**M22-My0020740**
Date Sampled			**May 04, 2022**	**May 04, 2022**
Test/Reference	LOR	Unit		
% Moisture	1	%	44	25
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5
13C4-PFBA (surr.)	1	%	88	92
13C5-PFPeA (surr.)	1	%	92	108
13C5-PFHxA (surr.)	1	%	89	94
13C4-PFHpA (surr.)	1	%	88	102
13C8-PFOA (surr.)	1	%	84	96
13C5-PFNA (surr.)	1	%	81	78
13C6-PFDA (surr.)	1	%	75	96
13C2-PFUnDA (surr.)	1	%	95	108
13C2-PFDoDA (surr.)	1	%	97	129
13C2-PFTeDA (surr.)	1	%	67	89
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10

Client Sample ID			0445_QC209_220504	0445_QC210_220504
Sample Matrix			Soil	Soil
Eurofins Sample No.			M22-My0020739	M22-My0020740
Date Sampled			May 04, 2022	May 04, 2022
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
13C8-FOSA (surr.)	1	%	86	95
D3-N-MeFOSA (surr.)	1	%	103	126
D5-N-EtFOSA (surr.)	1	%	92	119
D7-N-MeFOSE (surr.)	1	%	90	101
D9-N-EtFOSE (surr.)	1	%	88	131
D5-N-EtFOSAA (surr.)	1	%	89	134
D3-N-MeFOSAA (surr.)	1	%	113	136
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	[N09]16	[N09]13
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5
13C3-PFBS (surr.)	1	%	85	97
18O2-PFHxS (surr.)	1	%	96	97
13C8-PFOS (surr.)	1	%	83	94
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	75	80
13C2-6:2 FTSA (surr.)	1	%	61	64
13C2-8:2 FTSA (surr.)	1	%	97	106
13C2-10:2 FTSA (surr.)	1	%	73	97
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	16	13
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	16	13
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	16	13
Sum of WA DWER PFAS (n=10)*	10	ug/kg	16	13
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	May 09, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	May 13, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	May 13, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	May 13, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	May 13, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	May 09, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing
web: www.eurofins.com.au

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521
Melbourne Sydney Brisbane Newcastle

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898
Perth

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954
Auckland Christchurch

Company Name: Cardno Victoria Pty Ltd
Address:

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone:
Fax:

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name:

Eurofins Analytical Services Manager

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	0445_QC200_220503	May 03, 2022		Water	M22-My0020732			X
2	0445_QC201_220503	May 03, 2022		Water	M22-My0020733			X
3	0445_QC203_220504	May 04, 2022		Water	M22-My0020734			X
4	0445_QC204_220504	May 04, 2022		Water	M22-My0020735			X
5	0445_QC205_220505	May 05, 2022		Water	M22-My0020736			X
6	0445_QC206_	May 05, 2022		Water	M22-			X

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521
Melbourne [redacted] Sydney [redacted] Brisbane [redacted] Newcastle [redacted]

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898
Perth [redacted]

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954
Auckland [redacted] Christchurch [redacted]

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone: [redacted]
Fax: [redacted]

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
	220505				My0020737			
7	0445_QC207_220504	May 04, 2022		Water	M22-My0020738			X
8	0445_QC209_220504	May 04, 2022		Soil	M22-My0020739		X	X
9	0445_QC210_220504	May 04, 2022		Soil	M22-My0020740		X	X
10	0445_QC211_220506	May 06, 2022		Water	M22-My0020741			X
11	0445_QC202_220503	May 03, 2022		Water	M22-My0020742	X		
12	0445_QC208_220505	May 05, 2022		Water	M22-My0020743	X		

eurofins | Environment Testing

[redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521
Melbourne [redacted] Sydney [redacted] Brisbane [redacted] Newcastle [redacted]

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898
Perth [redacted]

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954
Auckland [redacted] Christchurch [redacted]

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone: [redacted]
Fax: [redacted]

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager [redacted]

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
13	0445_QC2502_220506	May 06, 2022		Water	M22-My0020744	X		
Test Counts						3	2	10

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	78			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	93			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	82			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	76			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	72			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	68			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	80			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	81			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	79			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	107			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	96			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	84			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	118			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	76			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	87			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	69			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	86			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	85			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	63			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	104			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	78			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	82			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	64			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	70			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	67			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	83			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M22-My0032938	NCP	%	79			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M22-My0032938	NCP	%	60			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M22-My0032938	NCP	%	80			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-My0032938	NCP	%	74			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M22-My0032938	NCP	%	72			50-150	Pass	
Perfluorononanoic acid (PFNA)	M22-My0032938	NCP	%	70			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M22-My0032938	NCP	%	93			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-My0032938	NCP	%	85			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-My0032938	NCP	%	84			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-My0032938	NCP	%	143			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-My0032938	NCP	%	87			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M22-My0032938	NCP	%	84			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-My0032938	NCP	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-My0032938	NCP	%	102			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-My0032938	NCP	%	85			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-My0032938	NCP	%	85			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-My0032938	NCP	%	72			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-My0032938	NCP	%	84			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M22-My0032938	NCP	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-My0032938	NCP	%	78			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-My0032938	NCP	%	103			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-My0032938	NCP	%	82			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-My0032938	NCP	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-My0032938	NCP	%	72			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-My0032938	NCP	%	80			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-My0032938	NCP	%	77			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-My0032938	NCP	%	88			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-My0032938	NCP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-My0032938	NCP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-My0032938	NCP	%	91			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-My0020712	NCP	%	9.6	9.4	3.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-My0032364	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-My0032364	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-My0032364	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-My0032364	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS
[redacted] Senior Analyst-Sample Properties



General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins | Environment Testing

[redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521
Melbourne [redacted]
Sydney [redacted]
Brisbane [redacted]
Newcastle [redacted]

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898
Perth [redacted]

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954
Auckland [redacted]
Christchurch [redacted]

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone: [redacted]
Fax: [redacted]

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager [redacted]

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	0445_QC200_220503	May 03, 2022		Water	M22-My0020732			X
2	0445_QC201_220503	May 03, 2022		Water	M22-My0020733			X
3	0445_QC203_220504	May 04, 2022		Water	M22-My0020734			X
4	0445_QC204_220504	May 04, 2022		Water	M22-My0020735			X
5	0445_QC205_220505	May 05, 2022		Water	M22-My0020736			X
6	0445_QC206_	May 05, 2022		Water	M22-			X

eurofins | Environment Testing

[redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521
Melbourne [redacted]
Sydney [redacted]
Brisbane [redacted]
Newcastle [redacted]

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898
Perth [redacted]

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954
Auckland [redacted]
Christchurch [redacted]

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone: [redacted]
Fax: [redacted]

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
	220505				My0020737			
7	0445_QC207_220504	May 04, 2022		Water	M22-My0020738			X
8	0445_QC209_220504	May 04, 2022		Soil	M22-My0020739		X	X
9	0445_QC210_220504	May 04, 2022		Soil	M22-My0020740		X	X
10	0445_QC211_220506	May 06, 2022		Water	M22-My0020741			X
11	0445_QC202_220503	May 03, 2022		Water	M22-My0020742	X		
12	0445_QC208_220505	May 05, 2022		Water	M22-My0020743	X		

eurofins | Environment Testing

[redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
[redacted]

Sydney
[redacted]

Brisbane
[redacted]

Newcastle
[redacted]

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
[redacted]

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
[redacted]

Christchurch
[redacted]

Company Name: Cardno Victoria Pty Ltd
Address: [redacted]

Project Name: BANDIANA
Project ID: DE19008

Order No.:
Report #: 886780
Phone: [redacted]
Fax: [redacted]

Received: May 9, 2022 4:20 PM
Due: May 12, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217								
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
13	0445_QC2502_220506	May 06, 2022		Water	M22-My0020744	X		
Test Counts						3	2	10

APPENDIX

D

FIELD RECORDS & CALIBRATION CERTIFICATES

EQUIPMENT QUALITY REPORT

Water Quality Meter:

Equipment Code: MWQ-2559 Serial Number: 19E102559

The following equipment has been issued as follows:

✓ Equipment is clean ✓ Impeller and probe check

Calibration Results							
Parameter	**Solution Description (Brand, batch # and expire date)**	**Standard**		**Error Range**	**Result**	
Temperature (^{0}C)	-	20°C		-	18	
pH	HC04424075, Exp: Nov 23 HC14519277, Exp: Feb 24	7.02	4.00	± 0.2	7.03	4.00
Sp. Conductivity (µS/cm)	374826, Exp: Nov 23	12880		± 20	12878	
DO (%)	11171, Exp: Sep 22	0%	100%	± 3	0.7%	100.9%
Redox (mV)	A 362917, Exp: Sep 22 B 362918, Exp: Sep 22	240		± 10	231.8	

Date: 21/04/2022

Calibrated by: [redacted]

Please check that the following items are received and all items are returned. Please clean equipment before retuning. **A minimum $20 service/repair charge applies to any unclean or damaged items.**

Item	HT Id No.	Sent	Returned
Water Quality Meter	**MWQ-2559**	✓	
Manual	N/A	✓	
Probe Cluster	N/A	✓	
In situ monitoring cage	N/A	✓	
Storage cup	N/A	✓	
Flow through Cell	N/A	✓	
Calibration cup and lid	N/A	✓	
Spare Batteries / Screwdriver	N/A	✓	
Test and Tag	N/A	✓	

✓ Equipment voltage ✓ Pre-Delivery Calibration Confirmation Test

Date: 21/04/2022

Calibrated by: [redacted]

HT JOB NO: 19363 CLIENTS REF: P/O No: TBC

RETURN DATE: / /	TIME:	CONDITION ON RETURN:

EQUIPMENT QUALITY REPORT

Water Quality Meter:

Equipment Code: MWQ-0166 Serial Number: 19B100166

The following equipment has been issued as follows:

✓ Equipment is clean ✓ Impeller and probe check

Calibration Results							
Parameter	**Solution Description (Brand, batch # and expire date)**	**Standard**		**Error Range**	**Result**	
Temperature (^{0}C)	-	18°C		-	18	
pH	HC04424075, Exp: Nov 23 HC14519277, Exp: Feb 24	7.03	4.00	± 0.2	7.02	4.00
Sp. Conductivity (µS/cm)	374826, Exp: Nov 23	12880		± 20	12881	
DO (%)	11171, Exp: Sep 22	0%	100%	± 3	0.5%	100.8%
Redox (mV)	A 362917, Exp: Sep 22 B 362918, Exp: Sep 22	244.4		± 10	241.8	

Date: 21/04/2022

Calibrated by: [redacted]

Please check that the following items are received and all items are returned. Please clean equipment before retuning. **A minimum $20 service/repair charge applies to any unclean or damaged items.**

Item	HT Id No.	Sent	Returned
Water Quality Meter	**MWQ-0166**	✓	
Manual	N/A	✓	
Probe Cluster	N/A	✓	
In situ monitoring cage	N/A	✓	
Storage cup	N/A	✓	
Flow through Cell	N/A	✓	
Calibration cup and lid	N/A	✓	
Spare Batteries / Screwdriver	N/A	✓	
Test and Tag	N/A	✓	

✓ Equipment voltage ✓ Pre-Delivery Calibration Confirmation Test

Date: 21/04/2022

Calibrated by: [redacted]

HT JOB NO: 19363 CLIENTS REF: P/O No: TBC

RETURN DATE: / /	TIME:	CONDITION ON RETURN:

F3.01 Equipment Calibration Report
YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus
Serial Number: 19H102165 MWQ 258-1

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent?
Carry case	✓	☐
Attached sensors (x4)	✓	☐
Spare Batteries	✓	☐
Connector Cable	✓	☐
Instruction Manual	✓	☐

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	✓	☐
Operations check (screen functions)	✓	☐
Temperature check	✓	☐

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	3.93
pH	pH: Buffer Solution 7.00	7.00	6.96
pH	pH: Buffer Solution 10.00	10.00	NA
Redox	Standard ORP solution	240 mV @ 9 °c	252 mV @ 9 °c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	102.9
O_2	Sodium Sulphite for 0% Dissolved Oxygen	0%	
Conductivity	Standard Conductivity Solution	12.88 µS/cm @ 9 °c	13.58 mV @ 9 °c

Checked/ Calibrated by: [redacted]

Signed: [redacted]

Date: 8/5/22

[1] YSI Professional Plus – Calibration Tips; Rev A, December 2010.

Scanned with CamScanner

F3.01 Equipment Calibration Report
YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus
Serial Number: ~~19H102165~~ MWQ-016G

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent?
Carry case	☑	☐
Attached sensors (x4)	☑	☐
Spare Batteries	☑	☐
Connector Cable	☑	☐
Instruction Manual	☑	☐

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	☑	☐
Operations check (screen functions)	☑	☐
Temperature check	☑	☐

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	4.06
pH	pH: Buffer Solution 7.00	7.00	6.95
pH	pH: Buffer Solution 10.00	10.00	NA
Redox	Standard ORP solution	240 mV @ 9 °c	256.2 mV @ 9.8 °c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	100% Sat/ 0.01 mg/L
O_2	Sodium Sulphite for 0% Dissolved Oxygen	0%	0.0%
Conductivity	Standard Conductivity Solution	12.88 µS/cm @ 9 °c	9.59 mV @ 9 °c

Checked/ Calibrated by: [redacted]

Signed:

Date: 3/5/22

[1] YSI Professional Plus – Calibration Tips; Rev A, December 2010.

Scanned with CamScanner

Date of Bump Test	Job Number	Unit Brand/ Model	Ambient Air Oxygen Calibration		Zero % Oxygen Solution Calibration		Standard Concentrations (Y if all are present)		Ambient Temperature (°C)	Bump Test Reading	Bump Test Readings within ±5%?			Comment	Test by (Name)	(Signature)
4/5/22	DEF19005 -BANDIAN	YSI Pro Plus ~~[struck through]~~ 19B100166	100% Saturation?	(Y) N	0% Calibration	(Y) N	pH 4.00 pH 7.00 pH 10.00 N/A EC: 12.88 µS/cm @ 13 °C ORP: 240 mV @ 13 °C	(Y) N (Y) N Y (N) (Y) N (Y) N	13	pH 4.00: 4.01 pH 7.00: 7.18 pH 10.00: N/A EC: 13.5 µS/cm @ 13 °C ORP: 249 mV @ 13 °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	(Y) N (Y) N Y / N (Y) N (Y) N (Y) N		[redacted]	[redacted]
5/5/22	↓	↓	100% Saturation?	(Y) N	0% Calibration	(Y) N	pH 4.00 pH 7.00 pH 10.00 EC: 9.5 µS/cm @ 12 °C ORP: 255 mV @ 12 °C	(Y) N (Y) N Y (N) (Y) N (Y) N	11.6	pH 4.00: 4.01 pH 7.00: 7.22 pH 10.00 EC: ~~[struck through]~~ /12.1 µS/cm @ 11.6 °C ORP: 251 mV @ 11.6 °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	(Y) N Y (N) Y / N (Y) N (Y) N (Y) N	pH calibrated. EC calibrated	[redacted]	[redacted]
6/5/22	↓	↓	100% Saturation?	(Y) N	0% Calibration	(Y) N	pH 4.00 pH 7.00 5.21@6°C pH 10.00 or EC: 9.19 µS/cm @ 10 °C ORP: 273 mV @ 5 °C	(Y) / N (Y) / N Y / (N) (Y) N (Y) N	6.0	pH 4.00: 3.87 pH 7.00: 7.09 pH 10.00 EC: 8.31 µS/cm @ 6 °C ORP: 263 mV @ 6 °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	(Y) N (Y) / N Y / (N) (Y) N (Y) N (Y) / N		[redacted]	[redacted]
			100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 pH 7.00 pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	Y / N Y / N Y / N Y / N Y / N		pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y / N Y / N Y / N Y / N Y / N Y / N			
			100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 pH 7.00 pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	Y / N Y / N Y / N Y / N Y / N		pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y / N Y / N Y / N Y / N Y / N Y / N			
			100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 pH 7.00 pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	Y / N Y / N Y / N Y / N Y / N		pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y / N Y / N Y / N Y / N Y / N Y / N			
			100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 pH 7.00 pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	Y / N Y / N Y / N Y / N Y / N		pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y / N Y / N Y / N Y / N Y / N Y / N			
			100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 pH 7.00 pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	Y / N Y / N Y / N Y / N Y / N		pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y / N Y / N Y / N Y / N Y / N Y / N			
			100% Saturation?	Y / N	0% Calibration	Y / N	pH 4.00 pH 7.00 pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	Y / N Y / N Y / N Y / N Y / N		pH 4.00: pH 7.00: pH 10.00 EC: ____ µS/cm @ ____ °C ORP: ____ mV @ ____ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y / N Y / N Y / N Y / N Y / N Y / N			

Scanned with CamScanner

Cardno

MWQ-0166

Date of Bump Test	Job Number	Unit Brand/ Model	Ambient Air Oxygen Calibration		Zero % Oxygen Solution Calibration		Standard Concentrations (Y if all are present)		Ambient Temperature (°C)	Bump Test Reading	Bump Test Readings within ±5%?			Comment	Test by (Name)	(Signature)
4/5/22	DEF19008-BANDIANA	YSI Pro Plus ~~[illegible]~~ 19E102559	100% Saturation?	Y	0% Calibration	Y	pH 4.00 pH 7.00 pH 10.00 N/A EC: 10 µS/cm @ 13 °C ORP: 240 mV @ 13 °C	Y Y N Y Y	13.2	pH 4.00: 4.04 pH 7.00: 7.10 pH 10.00 N/A EC: 9.7 µS/cm @ 13 °C ORP: 231 mV @ 13 °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y Y Y/N Y Y Y	~~[illegible]~~	[redacted]	[redacted]
5/5/22	↓	↓	100% Saturation?	Y	0% Calibration	Y	pH 4.00 pH 7.00 pH 10.00 EC: 9.5 µS/cm @ 12 °C ORP: 255 mV @ 12 °C	Y Y N Y Y	11.8	pH 4.00: 4.08 pH 7.00: 7.09 pH 10.00 EC: 9.4 µS/cm @ 11.8 °C ORP: 249 mV @ 11.5 °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y Y Y/N Y/N Y/N Y/N		[redacted]	[redacted]
6/5/22	↓	↓	100% Saturation?	Y	0% Calibration	Y	pH 4.00 pH 7.00 pH 10.00 EC: 8.21 µS/cm @ 6 °C ORP: 273 mV @ 5 °C	Y Y N Y Y	5.9	pH 4.00: 4.07 pH 7.00: 7.13 pH 10.00 EC: 7.7 µS/cm @ 6 °C ORP: 265 mV @ 6 °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y Y Y/N N Y Y	EC recalibrated	[redacted]	[redacted]
			100% Saturation?	Y/N	0% Calibration	Y/N	pH 4.00 pH 7.00 pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	Y/N Y/N Y/N Y/N Y/N		pH 4.00: pH 7.00: pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y/N Y/N Y/N Y/N Y/N Y/N			
			100% Saturation?	Y/N	0% Calibration	Y/N	pH 4.00 pH 7.00 pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	Y/N Y/N Y/N Y/N Y/N		pH 4.00: pH 7.00: pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y/N Y/N Y/N Y/N Y/N Y/N			
			100% Saturation?	Y/N	0% Calibration	Y/N	pH 4.00 pH 7.00 pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	Y/N Y/N Y/N Y/N Y/N		pH 4.00: pH 7.00: pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y/N Y/N Y/N Y/N Y/N Y/N			
			100% Saturation?	Y/N	0% Calibration	Y/N	pH 4.00 pH 7.00 pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	Y/N Y/N Y/N Y/N Y/N		pH 4.00: pH 7.00: pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y/N Y/N Y/N Y/N Y/N Y/N			
			100% Saturation?	Y/N	0% Calibration	Y/N	pH 4.00 pH 7.00 pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	Y/N Y/N Y/N Y/N Y/N		pH 4.00: pH 7.00: pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y/N Y/N Y/N Y/N Y/N Y/N			
			100% Saturation?	Y/N	0% Calibration	Y/N	pH 4.00 pH 7.00 pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	Y/N Y/N Y/N Y/N Y/N		pH 4.00: pH 7.00: pH 10.00 EC: ___ µS/cm @ ___ °C ORP: ___ mV @ ___ °C	pH 4.00: pH 7.00: pH 10.00 EC: ORP: Temp:	(± pH 0.2) (± pH 0.2) (± pH 0.2) (± 150µS/cm) (± 10mV) (± 2°C)	Y/N Y/N Y/N Y/N Y/N Y/N			

Scanned with CamScanner

Event	Location	Property	Easting	Northing	Monitoring Date	DSI Bore Depth (m)	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Other Observations on Bore/Site	Temp (C°)	DO (mg/L)	EC (us/Cm)	TDS	pH	Eh (mV)
E2	MW009	East BMA	495603.37	5999848.02	4/05/22	11.6	9.442	166.28	7.124	159.156	-	17.7	0.76	282.7	183.755	6.21	144.1
E2	MW012	East BMA	495534.14	5999634.04	4/05/22	159.82	10.54	167.36	7.945	159.415	Yellow Cloudy, low turbidity, minor orange sediment present	17.4	1.15	411.4	267.41	6.1	64
E2	MW016	East BMA	495641.49	5999946.12	8/05/22	158.38	10.77	166.16	7.259	158.901	Slight yellow, low turbidity,	16.4	0.46	436.7	283.855	6.1	89
E2	MW018	East BMA	495834.70	5999717.39	4/05/22	9.27	11.4	165.43	6.595	158.835	Slight cloudy, low turbidity,	16.6	1.68	702	456.3	6.46	101.2
E2	MW020	East BMA	495826.29	5999801.50	3/05/22	8.5	7.05	165.41	6.599	158.811	Slight grey, low turbidity	19	1.83	521.6	339.04	6.22	92.5
E2	MW029	East BMA	495426.45	5999463.69	4/05/22	10	11.237	168.11	7.841	160.269	-	13.8	4.88	130.3	84.695	5.98	147.4
E2	MW034	East BMA	495753.66	5999858.29	3/05/22	9.9	11.14	166.63	7.815	158.815	Brown sediment, high turbidity, ants in hydrasleeve	18.8	2.64	397.1	258.115	6.25	92.2
E2	MW035	East BMA	495683.72	5999911.25	3/05/22	10.3	10.358	166.22	7.341	158.879	Ants in water	18.2	0.8	307.6	199.94	6.09	-256.8
E2	MW042	East BMA	495677.04	5999879.86	3/05/22	17	18.479	166.62	7.621	158.999	-	18.5	0.75	278.8	181.22	6.11	-229.4
E2	MW043	East BMA	495680.27	5999879.94	3/05/22	12.3	13.408	166.55	7.533	159.017	Slightly cloudy	19.2	3.05	274.1	178.165	6.33	-175.7
E2	MW046_D	East BMA	495752.45	5999855.99	3/05/22	21	22.31	166.49	8.305	158.185	Orange-brown colour, low turbidity, small sediment in water	18.6	3.58	388	252.2	6.18	106.4
E2	MW046_I	East BMA	495752.45	5999855.99	3/05/22	13.4	14.48	166.48	7.659	158.821	Slight grey, low turbidity	18.2	0.44	398.7	259.155	6.09	103.4
E2	MW052	Offsite	495251.08	5999549.74	4/05/22	11.06	9.638	168.49	7.888	160.602	Dead ants in water	12.7	1.65	101.7	66.105	5.96	-120.9
E2	MW304	South BMA	491289.32	6000521.98	4/05/22	21.78	21.6	176.131	15.945	160.186	Clear, low turbidity, sulphuric organic odour	17	3.44	12190	7923.5	6.89	-150.4
E2	MW307	South BMA	491307.09	6000261.17	4/05/22	27.37	27.3	181.086	19.821	161.265	Clear, low turbidity, pale pink specs in water	19.1	3.37	4264	2771.6	9.97	161.2
E2	MW312	Offsite	491682.00	6000520.00	4/05/22	17.64	17.836	175.841	11.367	164.474	-	18.1	1.2	5660	3679	7.09	126.8
E2	MW342	North BMA	493664.00	6000189.00	4/05/22	17.42	17.68	180.605	13.871	166.734	Cloudy brown, high turbidity, sediment present, white precipitate on outsideof hydrasleeve	14.4	0.97	2252	1463.8	6.97	78.3
E2	MW345	North BMA	494560.00	5999979.00	5/05/22	7.48	5.479	168.316	4.905	163.411	Low turbidity, grey sediment, sulphuric organic odour	14.2	2.49	7215	4689.75	6.45	-56.5
E2	MW346	East BMA	494621.00	6000250.00	5/05/22	9.8	9.924	166.944	3.01	163.934	-	12.3	1.81	1533	996.45	6.59	219.4
E2	MW350_D	East BMA	495299.30	5999571.30	3/05/22	NM	20.693	168.229	7.932	160.297	slight frothing	20.1	0.8	219.1	142.415	6.25	-214.7
E2	MW350_S	East BMA	495299.30	5999571.30	6/05/22	NM	10.1	168.233	8	160.233	Light brown, low turbidity	16	6.77	292.9	190.385	6.21	109.6
E2	MW351	East BMA	495382.00	6000184.00	2/05/22	NM	8.85	164.79	5.726	159.064	Medium turbidity, borown ornage sediment at bottom	16.5	2.01	275.9	179.335	5.91	94.3
E2	MW352	Offsite	495498.59	6000070.77	2/05/22	NM	9.937	164.493	5.504	158.989	-	16.2	3.86	236.3	153.595	6.22	-205.9
E2	MW353	East BMA	495479.00	5999808.00	8/09/21	NM	8.004	166.625	7.238	159.387	-	15.3	1.45	412.5	268.125	6.5	135.7
E2	MW354	East BMA	495767.20	5999625.80	4/05/22	NM	10.93	166.142	7.064	159.078	Orange-brown colour, medium turbidity, small sediment in water	16.3	2.26	271.5	176.475	6.08	91.8
E2	MW356	Offsite	496059.80	6000518.40	5/05/22	NM	3.35	156.882	2.074	154.808	Red sediment	16.1	2.61	189.7	123.305	6.36	-9.9
E2	MW357	Offsite	495793.41	6001682.22	5/05/22	NM	6.32	156.243	2.866	153.377	Dead ants in water	14.2	3.34	156.1	101.465	6.45	-21.7
E2	MW360	Offsite	490936.64	6001498.75	6/05/22	NM	13.083	164.89	8.085	156.805	Sediment in bottom	16.7	1.09	629	408.85	7.42	-135.8
E2	MW361	Offsite	490943.84	6003056.80	5/05/22	NM	6.25	153.716	2.136	151.580	-	15.5	4.14	476	309.4	6.33	45.6
E2	MW403	Offsite	495312.20	5999591.49	3/05/22	9.98	9.51	166.926	6.075	160.851	-	19	4.03	254.8	165.62	5.83	134.4
E2	MW404	Offsite	495269.66	5999632.70	5/05/222	10.03	10.197	166.617	6.627	159.990		19.6	0.87	324.3	210.795	6.08	152.6
E2	OTH019	Offsite	-	-	5/05/22	-	-	-	-	-	Sampled from tap, tap run for 1 minute prior to sampling	12.4	5.88	308.9	200.785	6.23	112.3

Location ID	Property	Easting	Northing	Monitoring Date	Other Observations
SD323	On-base	491860.00	6000478.00	4/05/2022	High turbidity, brown murky water in pond, surrounded by soil mounds. No oily sheen or frothing, slight bioorganic odour. Reeds and leaf litter on soil mounds, organic matter and debris within and floating atop water
SD346	On-base	492606.00	6000048.00	9/05/2022	Brown, floating sediment, insect larva, sheen on surface, sampled near culvert leading from base
SD355	On-base	492997.00	5999947.00	4/05/2022	Water is cloudy, stagnant flow, in pond surrounded by long reeds. Little surface debris. No sheen, frothing or odour
SD375	On-base	494650.00	6000239.00	5/05/2022	Cloudy shallow water in gully overgrown by tall reeds. Leaf litter and organic matter throughout water body, few signs of bio organisms. No sheen, frothing or odour. Largely undisturbed with stagnant flow.
SD382	On-base	495424.00	6000092.00	3/05/2022	Slightly cloudy water with green grey tinge, reeds in pond with small sapling trees around edge, no film on water, water stagnant
SD395	Off-base	496191.00	5999895.00	9/05/2022	Sediment floating in water, reeds, minor red algae and gree
SD396	Off-base	-	-	3/05/2022	Red algae growing covering water, stagnant, NO, no film near entrance of water trickling in from embarkment, sediment in water
SD397	Off-base	-	-	3/05/2022	brown, sediment in water, algae and reeds growing, NO, NO film
SD400	Off-base	-	-	3/05/2022	Stagnant water, red lilly vegetation covering surface, brown murky, high turbidity, wetland environment, felled trees and stumps in water, cattle grazing along anf within shallow deths of water body, sample taken 2m from water edge
SD412	Off-base	495462.23	6001117.47	9/05/2022	Minor sediment, light orange, water stagnant, sampled ear roots of large tree, organic matter in water
SD424	Off-base	491511.00	6000639.00	4/05/2022	Water was cloudy with algae on concrete surfacss beneath water level towards concrete pipe entrance.Water flow was stagnant in pooling area before pipelines, and increased moving through pipes at 0.5m/s. No sheen or odour.
SD463	Off-base	491216.27	6000546.54	9/05/2022	Sediment floating, insect larva in water, stagnant, NONS, near culvert

Event	Location ID	Property	Easting	Northing	Monitoring Date	Water body depth (m)	Sample Depth (m)	Flow Rate	Water Colour	Turbidity	Other Observations	Temp (Co)	DO (mg/L)	EC (us/Cm)	TDS (mg/L)	pH	Eh (mV)
E2	SW302	On-base	491217.00	5999668.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW307	On-base	491296.00	5999663.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW310	On-base	491245.00	6000071.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW311	On-base	491280.00	6000430.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW313	On-base	491321.00	6000251.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW321	On-base	491612.00	6000381.00	9/05/2022	0.1	0.05	Low	Cloudy	Low	Brown sediment in water small insects present, weeds, algae, slime, minor foamy substance on water, sampled near culvert	14.8	6.83	104.1	67.665	7.47	-161.5
E2	SW322	On-base	491706.00	6000527.00	4/05/2022	0.15	0.1	Low	Cloudy	Low	Water is slightly cloudy. Bottom of surface water is clearly visible overgrown with leaf litter and root matter. No sign of oily Sheen or frothing. Sediment is brown and appears easily disturbed. Waterway flows off site.	15.6	6.82	143.2	93.08	6.85	108.5
E2	SW323/ SD323	On-base	491860.00	6000478.00	4/05/2022	0.5	0.1	Low	Brown	High	High turbidity, brown murky water in pond, surrounded by soil mounds. No oily sheen or frothing, slight bioorganic odour. Reeds and leaf litter on soil mounds, organic matter and debris within and floating atop water	18.7	7.21	41.7	27.105	6.43	102.8
E2	SW324	On-base	491976.00	6000279.00	3/05/2022	0.2	0.1	Low	Brown	High	Water colour is light brown with high turbidity. Water edge is overrun with reeds and grass. Evidence of wildlife utilising or moving near water body. No oily sheen or frothing, no odour. Water bugs present on water surface. Stagnant flow	15.5	4.55	57.4	37.31	6.24	110.5
E2	SW326	On-base	491968.00	5999998.00	3/05/2022	0.1	0.5	Low	Brown	High	Stagnant water pool directly adjacent to surface drainpipe. Water body blocked by leaf litter and reeds that extends down drainage gully. High turbidity with clearer water towards surface. No frothing or oily visuals. No significant odour.	13.4	4.73	93.4	60.71	6.53	94.6
E2	SW332	On-base	492126.00	6000156.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW333	On-base	492177.00	6000246.00	9/05/2022	0.2	0.1	Low	Cloudy	Medium	Grey cloudy water, mosquitos in water, stagnent, NONS	13.1595	5.91	27.7	18.005	7.36	-156.6
E2	SW336	On-base	492186.00	5999832.00	4/05/2022	1.5	0.1	Low	Green	High	Green water and surface algae layer. No frothing or oily sheens. Dam inactive for 2 months, within petroleum platoon. Water is stagnant, and high build up of sediment and algae on underwater dam surface.	18.7	6.86	341	221.65	3.52	216.3
E2	SW338	On-base	492273.00	6000114.00	9/05/2022	3	0.2	Low	Clear	Low	dam full to brim, clear water, pond refilled from town water approx 3 weeks prior to sampling	17.4	6.88	367.5	238.875	8.67	-156.5
E2	SW340	On-base	492352.00	6000181.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW346/ SD346	On-base	492606.00	6000048.00	9/05/2022	0.5	0.2	Low	Brown	High	Brown, floating sediment, insect larva, sheen on surface, sampled near culvert leading from base	17.2	5.28	87.5	56.875	6.95	28.7
E2	SW349	On-base	492827.00	5999999.00	4/05/2022	2.5	0.1	Low	Cloudy	Low	Water is mildly cloudy. Sample taken from pond with reeds growing along edges and in shallow water areas. Low turbidity and stagnant flow. No sheen, frothing or odours. Blue green algae warning as potrntual contamination within water	19.4	6.91	69.8	45.37	7.08	88.6
E2	SW355/ SD355	On-base	492997.00	5999947.00	4/05/2022	2	0.15	Low	Cloudy	Low	Water is cloudy, stagnant flow, in pond surrounded by long reeds. Little surface debris. No sheen, frothing or odour	18.7	8.28	79.7	51.805	7.31	97.1
E2	SW370	On-base	494029.00	5999774.00	9/05/2022	0.1	0.05	Low	Clear	Low	Orange sediment floating, very shallow, stagnant, surrounded by reeds and grass, insects in water	10.3	4.33	81.2	52.78	5.97	78.1
E2	SW374	On-base	494552.00	6000001.00	9/05/2022	1	0.2	Low	Cloudy	Medium	very cloudy, stagnabt, reeds, grasses, insect larva, green algae, NONS, grey cloudy surface but orange sediment in water	9.8	5.91	290.4	188.76	6.55	71.6
E2	SW375/ SD375	On-base	494650.00	6000239.00	5/05/2022	0.3	0.1	Low	Cloudy	Medium	Cloudy shallow water in gully overgrown by tall reeds. Leaf litter and organic matter throughout water body, few signs of bio organisms. No sheen, frothing or odour. Largely undisturbed with stagnant flow.	8.6	2.34	83.1	54.015	6.48	192.7
E2	SW379	On-base	495222.00	5999565.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW380	On-base	495340.00	5999652.00	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW382/ SD382	On-base	495424.00	6000092.00	3/05/2022	1	0.2	Low	Clear	Low	Slightly cloudy water with green grey tinge, reeds in pond with small sapling trees around edge, no film on water, water stagnant	13.2	6.9	35.1	22.815	6.08	97.2
E2	SW387	On-base	496084.00	5999677.00	3/05/2022	0.3	0.1	Low	Cloudy	Low	slightly brown, NO, NF, small green clover growing in water, downstream of culvert leading from defence	13.6	4.81	289.6	188.24	6.51	102.5
E2	SW390	Off-base	497942.00	5998177.00	5/05/2022	1.5	0.1	Medium	Clear	Low	Clear running river, approx. 15m wide. Camping ground 50m upstream. No sheen, frothing or odour. No floating debris. Multiple fallen trees in river inhibiting flow direction.	14.6	7.73	34	22.1	6.35	99.5
E2	SW393	Off-base	496236.00	5999368.00	9/05/2022	1.5	0.2	Medium	Clear	Low	Clear water, post very light rain, 0.125 m per sec, reeds and grass near by	11.8	10.05	193.8	125.97	7.22	107.4

Event	Location ID	Property	Easting	Northing	Monitoring Date	Water body depth (m)	Sample Depth (m)	Flow Rate	Water Colour	Turbidity	Other Observations	Temp (Co)	DO (mg/L)	EC (us/Cm)	TDS (mg/L)	pH	Eh (mV)
E2	SW395/ SD395	Off-base	496191.00	5999895.00	9/05/2022	1	0.1	Low	Cloudy	Medium	Sediment floating in water, reeds, minor red algae and gree	12.4	3.52	198.6	129.09	6.83	-65.7
E2	SW396/ SD396	Off-base	-	-	3/05/2022	2	0.2	Low	Cloudy	Medium	Red algae growing covering water, stagnant, NO, no film near entrance of water trickling in from embarkment, sediment in water	24.7	7.13	797	518.05	7.25	100.1
E2	SW397/ SD397	Off-base	-	-	3/05/2022	2	0.2	Low	Cloudy	Medium	brown, sediment in water, algae and reeds growing, NO, NO film	20.2	9.97	569	369.85	8.43	86.2
E2	SW398	Off-base	496369.00	6000178.00	3/05/2022	2.25	0.1	High	Clear	Low	Clear flowing water, reeds and trees along riverbank. No odour or frothing, water appears murky and brown, stray branches floating in river, no oily films. Sample taken 1m from riverbank	14.5	6.8	29.2	18.98	7.1	-209.5
E2	SW400/ SD400	Off-base	-	-	3/05/2022	0.15	0.1	Low	Brown	High	Stagnant water, red lilly vegetation covering surface, brown murky, high turbidity, wetland environment, felled trees and stumps in water, cattle grazing along anf within shallow deths of water body. sample taken 2m from water edge	19.2	4.03	181.8	118.17	6.63	-220.3
E2	SW401	Off-base	-	-	3/05/2022	0.3	0.15	Low	Brown	High	Stagnant water, water body mostly covered in red floating vegetation, small insects and organisms living in water body, murky brown colour, no oily films or surface debris, strong bioorganic odour	19.9	9.41	248.4	161.46	7.31	-179
E2	SW403	Off-base	495794.00	6000721.00	9/05/2022	0.5	0.1	Low	Clear	Low	Minkr red algae growing, reeds, long grass, blackberry byshes, insect larvi	16.9	7.01	210.7	136.955	6.44	104.2
E2	SW404	Off-base	495932.00	6000777.00	5/05/2022	2.5	0.1	Medium	Clear	Low	Clear, running water in River roughly 10 to 15m wide. Flow rate is 1 m per second. No sheen or frothing or odour. Banksides comprises of sandy silty mud mixed with leaf litter.	15	6.58	30.7	19.955	7.26	112.2
E2	SW405	Off-base	495713.70	6000917.23	9/05/2022	1	0.2	Low	Cloudy	Low	Red algae growing across surface, reeds, insects around, slightly cloudy, stagnant pond	17.7	5.11	508	330.2	7.15	99.7
E2	SW409	Off-base	495342.00	6000744.00	9/05/2022	1.5	0.2	Low	Cloudy	Low	Minor orange fine floating sediment, steep bank, near large tree, leaf matter in water, water barely moving	11.9	4.65	134.6	87.49	6.94	72.9
E2	SW412/ SD412	Off-base	495462.23	6001117.47	9/05/2022	1	0.2	Low	Cloudy	Low	Minor sediment, light orange, water stagnant, sampled ear roots of large tree, organic matter in water	11.7	7.54	537	349.05	7.09	101.7
E2	SW416	Off-base	495852.00	6001776.00	5/05/2022	2	0.2	Medium	Clear	Low	Clear running river, sample taken 1m from riverbank. No sheen or frothing or odour. Flow rate is 0.8m/s. Overhanging branches above river. Apparent aquatic life/fish in river.	15.1	6.42	34.4	22.36	7.33	99.1
E2	SW424/ SD424	Off-base	491511.00	6000639.00	4/05/2022	0.15	0.1	Low	Cloudy	Low	Water was cloudy with algae on concrete surfacss beneath water level towards concrete pipe entrance.Water flow was stagnant in pooling area before pipelines, and increased moving through pipes at 0.5m/s. No sheen or odour.	20.1	4.94	157.8	102.57	6.53	97.8
E2	SW427	Off-base	490948.72	6001301.83	6/05/2022	0.15	0.1	Low	Cloudy	Low	Water sampled from gully running along walking track and behind commerical buildings along service road. Water body formed by rainfall on day of sampling. Cloudy, muddy water. No sheen, odour. Water body was puddle separated from stream, stagnant flow	14.2	6.87	71.8	46.67	7.48	46.4
E2	SW430	Off-base	490913.00	6002786.00	9/05/2022	10	0.2	Low	Clear	Low	Area surrounded by dumped rubbish, starofoam, plastic, remain of a large cut down blackberry bush, water milky grey colour, slight rubbish odour, creek flowing slowly 0.1 m/sec	13.8	6.65	72	46.8	6.71	75
E2	SW431	Off-base	490883.28	6003648.07	6/05/2022	0.1	0.05	Low	Cloudy	Medium	Stagnant water flow, very flat land heavily redirected by vegetation & vines. High turbidity, cloudy on surface but murky on bottom of water body. Standing pond with no high flow of inout or output. No sheen,odour or frothing. Highly vegetated area	12.3	1.76	90.9	59.085	6.75	11.2
E2	SW432	Off-base	490789.00	6003749.00	6/05/2022	0.3	0.1	Medium	Clear	Low	Running stream of water downgradient from tunnel exit. Flowed over rocks and had floating leaf litter on water surface. Water flowed downhill towards tunnel exit. No sheen, odour or frothing.	12.4	4.85	106.3	69.095	7.03	61.4
E2	SW434	Off-base	490476.00	6003891.00	6/05/2022	0.4	0.1	Low	Cloudy	Low	Stagnant water flow. Cloudy, murky, felled trees and leaf litter in water. Signs of frothing, sheens along bankside. No disturbances, hidden away from footpath	12.7	5.43	98.1	63.765	7.02	86.6
E2	SW448	On-base	491960.62	5999684.39	9/05/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
E2	SW462	Off-base	495777.32	6001658.16	5/05/2022	0.3	0.15	Low	Clear	Low	Clear, running water with flow rate at 0.1 m/s. Small stream in gully overrun with reeds and aquatic plants. Largely undisturbed, no microorganisms sighted. No sheen, frothing or odour.	15.2	3.33	248.3	161.395	7.22	127.5
E2	SW463/ SD463	Off-base	491216.27	6000546.54	9/05/2022	0.25	0.1	Low	Brown	High	Sediment floating, insect larva in water, stagnant, NONS, near culvert	18.4	3.43	141.5	91.975	7.17	-170.1
E2	SW470	Off-base	496154.23	6000093.25	3/05/2022	0.3	0.15	Low	Brown	High	Stagnant, high turbidity ~50%, tree branches and biomatter along water bank and within water body. No disturbances	14.2	1.29	106.3	69.095	6.53	-264.9
E2	SW471	Off-base	495945.94	6000282.56	3/05/2022	0.3	0.1	Low	Clear	Low	Clear water, shallow depths, shrubbery throughout syrface water, small insects inhabiting water body, red algae growing on water surface, has been assed through by cattle	16.4	4.01	240.9	156.585	6.69	-206.6
E2	SW487	Off-base	495826.91	6000046.42	3/05/2022	2	0.2	Low	Cloudy	Low	Reeds and weeds growing in water, sediment floating, no film,NO, not flowing	21.7	7.61	570	370.5	7.39	90.6

APPENDIX

E

DATA QUALITY REVIEW

Data Quality Review
Bandiana Military Area, VIC

This Appendix reviews the Quality Assurance (QA) and Quality Control (QC) documentation. Quality assurance encompasses the actions, procedures, checks and decisions undertaken to ensure sample integrity and representativeness, and the reliability and accuracy of analysis results. The QA documentation should also include an indication of the Data Quality Objectives sought in relation to each significant action, test or process involved in the Assessment.

QC activities measure the effectiveness of the QA procedures by undertaking testing, and then comparing results to previously established objectives. QC work will include the internal laboratory testing as well as results of QC samples submitted such as trip blanks and duplicates. The quality of the information and/or data is deemed satisfactory when the QC results demonstrate that agreed objectives have been met.

Cardno undertook a review of its QA/QC as part of the data validation exercise. The findings are summarised below.

QA/QC Aspects	Evidence and Evaluation
	QA Documentation
Sampling and Analysis Quality Plan and Data Quality Objectives	Cardno was engaged by Department of Defence (the client) to carry out the PFAS Ongoing Monitoring Plan (OMP) at Bandiana Military Area (the Site). The monitoring event commenced on 2 May and concluded 9 May 2022, and is in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP) of 13 May 2022 (Our Ref: OMP002_Bandiana_ SAQP_Rev1.2). The assessment was carried out in general compliance with the following: ▪ Australian Standard AS 4482-2005 Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds. ▪ Department of Defence (2019), Contamination Management Manual (DCMM), August 2019. ▪ Department of Defence (2019), Pollution Prevention Guideline - Routine Water Quality Monitoring, Department of Defence, Department of Energy, 2018, Quality System Manual Schedule B15. ▪ EPA Victoria (2009), Industrial Waste Resources Guidelines, Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 701. ▪ Heads of Environmental Protection Authority's Australia and New Zealand (HEPA) (2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020. ▪ National Environment Protection Council (NEPC), 1999, National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013) (ASC NEPM). ▪ National Health and Medical Research Council (NHMRC) (2019), Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water, August 2019. ▪ USEPA (2000), Guidance for the Data Quality Objectives Process (EPA QA/G-4). A quality control program was implemented during the investigation and the quality assurance procedures used have been reiterated in the report.

QA/QC Aspects	Evidence and Evaluation
	The investigation was carried out in accordance with the Safe Work method Statements (SWMS) and Health, Safety and Environment Plan (HSEP) for the Site. Detailed work plans were also provided and are outlined in the SAQP. The Data Quality Objectives were expressed in terms of the purpose of the assessment and the relevant assessment criteria.
Data Validation Report	This review constitutes a data validation review. This was supported by an Esdat generated "QAQC Checker" excel report, summarised in Tables B3 and B4, Appendix B.
Data Representativeness	
Holding Times	Groundwater and surface water sample analysis holding times were in conformance with EPA Publication IWRG701 2009 *'Sampling and Analysis of Waters, Wastewaters, Soils and Wastes*.
Background Samples	No background samples were collected as part of this assessment.
Equipment Decontamination	The decontamination methodology conducted during this investigation is documented in the body of the report, and was in general conformance with the SAQP and work plans. ▪ Reusable sampling equipment was rinsed with Liquinox® and deionised water prior to the collection of each sample.
Data Precision and Accuracy	
QC Testing – Blind Replicates (Primary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 32 ▪ Blind Replicate Samples Analysed (ALS duplicates): 4 ▪ Blind Replicate Analyte Pairs: 112 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 1 ▪ Percentage of Analyte Pairs Exceeding Criteria: 0.89% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate sample pairs were all within one order of magnitude. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B4, Appendix B. ***Surface water*** ▪ Acceptance Criteria: RPD < 30 % ▪ Surface water Samples Analysed: 43 ▪ Blind Replicate Samples Analysed: 4 ▪ Blind Replicate Analyte Pairs: 112 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 12 ▪ Percentage of Analyte Pairs Exceeding Criteria: 10.7% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate sample pairs were all within one order of magnitude. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B4, Appendix B. ***Sediment*** ▪ Acceptance Criteria: RPD < 30% ▪ Sediment Samples Analysed: 12 ▪ Blind Replicate Samples Analysed (ALS duplicates): 2 ▪ Blind Replicate Analyte Pairs: 56 (excludes 'analytes' that are a summation of other analytes)

QA/QC Aspects	Evidence and Evaluation
	▪ Number of Analyte Pairs Exceeding Criteria: 2 ▪ Percentage of Analyte Pairs Exceeding Criteria: 3.5% RPD exceedances were associated with PFAS compounds. The PFAS RPD exceedances are generally attributed to low concentrations of analyte pairs and sample matrix heterogeneity. This is not considered to impact the results of the investigation. The RPD results are presented in Table B4, Appendix B.
QC Testing – Field Splits (Secondary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 32 ▪ Blind Replicate Samples Analysed: 4 ▪ Blind Replicate Analyte Pairs: 112 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 6 ▪ Percentage of Analyte Pairs Exceeding Criteria: 5.3% RPD exceedances were associated with PFAS compounds. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. The RPD results are presented in Table B4, Appendix B. ***Surface water*** ▪ Acceptance Criteria: RPD < 30 % ▪ Surface water Samples Analysed: 43 ▪ Blind Replicate Samples Analysed: 4 ▪ Blind Replicate Analyte Pairs: 112 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 8 ▪ Percentage of Analyte Pairs Exceeding Criteria: 7.1% RPD exceedances were associated with PFAS compounds. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. The RPD results are presented in Table B4, Appendix B. ***Sediment*** ▪ Acceptance Criteria: RPD < 30% ▪ Sediment Samples Analysed: 12 ▪ Blind Replicate Samples Analysed: 2 ▪ Blind Replicate Analyte Pairs: 56 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 1 ▪ Percentage of Analyte Pairs Exceeding Criteria: 1.7% RPD exceedances were associated with PFAS compounds. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs and sample matrix heterogeneity. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. The RPD results are presented in Table B4, Appendix B.

QA/QC Aspects	Evidence and Evaluation
Trip Blanks	One (1) trip blank was collected, and laboratory tested for PFAS. All analytes were reported below the limit of reporting (LOR). Trip blank results are presented in Table B5, Appendix B.
Laboratory Internal QC	Evidence of the laboratories internal QC testing is present and complete. Both ALS (the primary laboratory) and Eurofins-mgt performed internal QC with adequate testing and mostly satisfactory results for matrix spikes, method blanks and laboratory duplicates. Exceptions include: Reports EM2208381, EM2208122 Matrix Spike EM2208381—011 did not determine a matrix spike recovery as the background level was in excess of spike level for select PFAS compounds. Matrix Spike EM2208122—004 did not determine a matrix spike recovery as the Recovery less than lower data quality objective for select PFAS compounds.
Laboratory Method Detection Limit	Laboratory reports indicate the method detection limits were lower than the respective assessment criteria.
NATA endorsement of laboratory reports	Laboratory reports were stamped with the NATA endorsement stamp and signature. Laboratory reports are included in Appendix C of this report.
Calibration of Field Equipment	All field equipment used was calibrated by the equipment supplier. Certificates and daily bump test records are included in Appendix D of this report.
Decontamination and Equipment Blanks	Five (5) rinsate blanks were collected during the investigation. Rinsate blank samples were tested for PFAS which all reported a concentration below the laboratory LOR. Results are shown in Table B5, Appendix B.
Data Comparability	
Full Review of Data	Once all results have been received, Cardno undertook a full review of the data for any anomalies in consideration of historical data at each location (where available), such as first-time detections or exceedances being reported at locations which have not had detections or exceedances previously. Where potentially anomalous data is identified or suspected, further confirmatory measures were undertaken such as re-extraction and reanalysis of the sample by the laboratory and/or additional data quality review. The following samples were reanalysed: QC104, SW326, and SW471. All original results were confirmed.
Standard Procedures	Fieldwork procedures are detailed in the report and followed the work methods outlined in the SAQP.
Qualified Personnel	Staff involved in managing and reviewing the project and those involved in fieldwork are qualified personnel.
Sample Integrity	Field Chain of Custody forms are included in Appendix C of this report and demonstrate sample integrity.
Data Completeness	
Completeness of Test Program	The scope of work undertaken was generally consistent with that set out in the SAQP. Variations to the SAQP are detailed in the Factual Report.
Validity of Data Set	The data quality review indicates no significant systematic errors in the data collection process for surface water and groundwater and therefore, the data set used as the basis for the assessment is considered valid and complete.

APPENDIX

F

INFORMATION ABOUT ENVIRONMENTAL REPORTS

About Site Environmental Assessment Reports

1. Introduction

This document explains the Environmental Site Assessment (ESA) process and the context that applies to the use of Environmental Reports issued by Cardno.

2. What is an ESA?

Environmental Site Assessments (ESA) are undertaken for a range of purposes, specific to the brief issued by the client in each case. The scope may include one or a combination of any of the following:

- A factual report of the condition of a portion of the site or one aspect of an entire site.
- Assessment of the contamination levels in soil to be removed from a site – a waste classification assessment.
- Validation of the success of remediation of a site or a portion of a site.
- Provision of a professional opinion about the suitability of a site for one or more uses, in terms of its contamination status.

The scope of any ESA needs to be defined at the outset.

An ESA is not an Environmental Audit. Such audits are undertaken in accordance with the provisions of regulations enacted in various states of Australia, and are referred to as Site Audits in some jurisdictions. Statutory audits provide certification by EPA accredited auditors that a site is suitable for one or more uses. An ESA may provide similar advice but cannot be used in place of an audit if the latter is required by regulation in any instance. However in some circumstances and jurisdictions an ESA is sufficient to provide "environmental sign-off" of a site.

An ESA may be undertaken for due diligence purposes, to establish whether the site has been impacted to the extent that some beneficial uses of the site may be precluded. Due diligence audits in many cases may be completed as non-statutory Audits, although in some jurisdictions they can also be statutory audits, if defined as such at the outset.

3. The ESA Process

The Client generally initiates the ESA process by specifying a brief which identifies the specific objectives of the assessment. If not, it is the consultants' duty to so specify the ESA

In the case of an ESA to provide an opinion about the suitability of the site for use, it would be conducted in accordance with NEPM (Site Assessment). Such ESA would not commence until a thorough site history assessment (Phase 1 Assessment: to identify the potential for significant contamination at a site) is conducted. However, where the history is unclear, a broad screening of chemical parameters can be used to test environmental media. This normally includes a broad range of organic and inorganic compounds and elements, often referred to as an Environmental Screen.

(In the case of an ESA for a purpose other than to provide an opinion about the suitability of the site for use, it is not always necessary to undertake a Phase 1 assessment.)

The ESA requires sampling of soil at representative locations across the site. A NATA accredited laboratory performs the analysis of soil. It is impractical for all of the soil to be assessed. The ESA is often based on a statistical method of grid or random sampling, augmented by targeted sampling at locations known or suspected to be contaminated. Guidance on sampling strategy and density is provided in Australian Standard AS4482.1–2005. However, some considerable degree of judgement is still required in the application of any sampling and testing strategy. For example the blanket application of the "hot spot" method presented in this standard is often inappropriate given its limitations.

The field program also investigates the likelihood of contamination below the site surface. Field investigations must sample and test fill as well as the natural soils. If contamination is found then it is common for further work to be undertaken to characterise, to the extent practical, its vertical and horizontal extent. However, where fill is encountered and testing shows it to be uncontaminated, it must be realised that the heterogeneous nature of the material might mean that not all pockets of contaminated material can be detected using normal sampling regimes.

EPA guidelines for auditors, that may be relevant for an ESA, indicate the need in all cases to consider the potential for groundwater contamination in any site. This does not mean all sites need to be drilled to sample groundwater, but it is most often the case. Most hydrogeological settings and groundwater conditions are complex and vary in space and time. The condition of groundwater is investigated to identify if any beneficial use or environmental value of groundwater is precluded due to contamination.

As previously stated for soil, all groundwater at the site cannot be tested. The environmental investigations are conducted in accordance with industry standards and guidelines (e.g. EPA Vic Pub 668). This provides a level of confidence that a sufficiently comprehensive assessment of the groundwater at the site is achieved.

Where an investigation shows that groundwater is polluted, consideration should be given to assessing the risks and the need for and practicality of any clean up.

4. Environmental Assessment Report

The ESA Report details the findings of the ESA. It provides summary information on the site definition, the reasons for the assessment and other relevant facts. It reviews the scope and quality of the site investigations, laboratory testing and data analyses undertaken. These reports also present a review of the contamination status of the site, the need for any further clean up, and an opinion on the suitability of the site for a range of beneficial uses and land uses such as “residential – low density”, “commercial” etc, as appropriate.

However, as noted above, some ESA have a narrow scope such as for classification of waste soil for removal from site, and do not make conclusions on suitability of site for use.

The ESA Report generally includes copies of other documents and reports, necessary to support the assessment findings, presented as appendices. These can contain more detailed information than the body of the ESA Report. Care should be taken to also read the appended documents and the ESA report in full.

Cardno generally issues reports in electronic form (e-Report) on CD ROM. ESA Reports are issued in this format as Adobe Acrobat™ PDF files. However, a paper copy of the executive summary of the ESA Report is generally issued to the client, and others as required by the brief or by regulation.

5. Limitations of Environmental Assessment Report

The ESA Report is prepared in a manner that can be easily read by a lay person with a legitimate interest in the contamination status of the site, such as the site owner or occupier, EPA and Local Planning Authority. The ESA report is not intended for use by other parties or for other purposes. Anyone who uses the assessment report for purposes other than specified in the report, does so at their own risk.

The site should only be used for one or more of the beneficial uses and land uses identified in the ESA as suitable.

The conditions and qualifications may apply to the suitability of the site for use, and it is the responsibility of the Client to be cognizant of and accept these in accepting the report. Cardno are only responsible for the issuing of the ESA report but accepts no liability for the costs incurred in the implementation of ESA findings.

The ESA provides a “snapshot” of the site conditions at the time of the site investigation. Consequently, the report may not be valid at a later time if there has been any change to the contamination status of the site in that time. Verification of the status of the site may be required in cases where a significant time has elapsed, or site conditions have changed since the assessment and audit.

The ESA is necessarily limited by constraints such as time, cost and available information; although normal professional practice at the time has been applied with all due care to prepare the report. A necessary requirement of this process is the horizontal and vertical interpolation of data from discrete locations. However, site conditions are generally not homogenous and some discrepancies will occur between the actual and predicted results at locations not directly sampled. There is a risk that contamination may occur at the site and not be identified by a competent investigation and assessment. The approach adopted in sampling (a combination of statistically based grid and judgmental sampling) seeks to reduce, but cannot eliminate, this risk.

Where unexpected occurrences of contamination arise, subsequent to the issue of the ESA Report, Cardno should be permitted to make an interpretation of these facts in relation to the ESA Report findings. Consequently, the Client should inform Cardno and seek their opinion. Cardno accepts no liability for costs incurred due to such

unexpected occurrences, given the inherent uncertainties in the assessment process.

Cardno uses information provided by other parties as the basis for the ESA, and reliance on this information is at the discretion of Cardno. However, however Cardno cannot guarantee any of the facts, findings or conclusions presented by other parties. Cardno will not be liable for the use of information, provided by others that is subsequently found to be intentionally misleading.

The ESA Report is not and does not purport to be anything other than a contaminated land ESA. It is not a geotechnical report and bore logs reproduced are for interpretation of the likely distribution of contamination. They are not intended for geotechnical interpretations and may not be adequate for this purpose.

The ESA Report is not intended to be a comprehensive analysis of the presence and associated risk of asbestos in buildings and services. Where asbestos in buildings and services is known or likely, the report may only caution that an appropriately qualified person be engaged to undertake demolition to avoid contamination of the site.

Cardno

13 August 2015

Appendix E OMP Factual Sampling Report - October 2022

©JBS&G Australia Pty Ltd

PFAS OMP Factual Report

Biannual Sampling Event October/November 2022

Bandiana Military Area

DEF19008



Prepared for

Department of Defence

10 March 2023

Cardno

Contact Information

Cardno Victoria Pty Ltd
ABN 47 106 610 913

Level 4, 501 Swanston Street,
Melbourne Vic 3000
Australia

www.cardno.com
Phone +61 3 8415 7777
Fax +61 3 8415 7788

Document Information

Prepared for	Department of Defence
Project Name	PFAS OMP Factual Report
File Reference	OMP002_Bandiana_E3 FactualReport_Rev2.docx
Job Reference	DEF19008
Date	10 March 2023
Version Number	2
Effective Date	10/03/2023

Author(s):

Approved By:

[redacted]

[redacted]

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Table of Contents

1	Introduction		1
	1.1	Background	1
	1.2	Purpose & Objectives	1
	1.3	Relevant Guidelines	1
2	Scope of Work		2
	2.1	Review / Revision of the SAQP	2
	2.2	Groundwater Monitoring	2
	2.3	Surface Water Monitoring	3
	2.4	Sediment Monitoring	3
	2.5	Data Management	3
	2.6	Deviations from the OMP SAQP	3
3	Methodology		5
	3.1	Groundwater Sampling Methodology	5
	3.2	Surface Water Sampling Methodology	6
	3.3	Quality Control / Quality Assurance	7
	3.4	Assessment Criteria	8
4	Field Observations and Results		8
	4.1	Conditions Impacting the Sampling Event	8
	4.2	Groundwater	9
	4.3	Surface water	11
	4.4	Data Validation	13
5	Summary and Conclusions		14
6	References		15

Appendices

Appendix A Figures

Appendix B Data Assessment Tables

Appendix C Laboratory Certificates

Appendix D Field Records & Calibration Certificates

Appendix E Data Quality Review

Appendix F Information about Environmental Reports

Tables

Table 2-1	Groundwater Monitoring Locations	2
Table 2-2	Surface Water Monitoring Locations	3
Table 2-3	Deviations from the SAQP	4

Table 3-1 Groundwater Sampling Method 5
Table 3-2 Surface Water Sampling Method 7
Table 3-3 Criteria for Groundwater and Surface Water 8
Table 4-1 Summary of Groundwater Results Exceeding Adopted Criteria 9
Table 4-2 Summary of Groundwater Results with First-time Detections or New Exceedances of Adopted Criteria 10
Table 4-3 Summary of Surface Water Results Exceeding Adopted Criteria 11
Table 4-4 Summary of Surface Water Results of First-time Detections and New Exceedances of Adopted Criteria 12
Table 5-1 Summary of Results 14

List of Abbreviations and Units

Chemical Names

DOC	Dissolved Organic Carbon
DO	Dissolved Oxygen
PFAS	Per- and Poly-fluoroalkyl Substances
PFHxS	Perfluorohexane Sulfonate
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
TDS	Total Dissolved Solids (salinity of water)
TSS	Total Suspended Solids

Technical Terms

AFFF	Aqueous Film-Forming Foam
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australia and New Zealand Guidelines
AS	Australian Standard
AST	Above-ground Storage Tank
BGL	Below Ground Level
COC	Chain of Custody
CSM	Conceptual Site Model
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
HHERA	Human Health and Ecological Risk Assessment
HIL	Health Investigation Level
HSL	Health Screening Level
LOR	Limit of Reporting
N/A	Not Applicable
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environmental Protection Measure
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percentage Difference
SAQP	Sampling and Analysis Quality Plan
SEPP	State Environment Protection Policy

Units

ha	Hectares
mBGL	Metres Below Ground Level
mbTOC	Metres below Top of Casing
mg/kg	Milligram per Kilogram (approximately equivalent to ppm)
mg/L	Milligram per Litre
ppm	Parts per Million
µg/L	Micrograms per Litre
µS/cm	Micro Siemens per Centimetre (Electrical Conductivity - Water)

Site Specific

OMP	Ongoing Monitoring Plan
DCMM	Defence Contamination Management Manual
ESdat	Environmental data management software

1 Introduction

1.1 Background

Cardno was engaged by the Department of Defence ("Defence" or "the Client") to carry out the Per- and Poly-Fluoroalkyl Substances (PFAS) Ongoing Monitoring Plan (OMP) at Bandiana Military Area ("the Site"). The Bandiana Military Area (BMA) is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

The OMP was carried out in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP):

> Cardno, 20 October 2022 Reference: DEF19008_OMP002, '*PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area'*, Rev 1.3.

For the purposes of this report:

> The "On-Site Monitoring Area" (the 'Site') is defined as BMA and is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

> The "Off-Site Monitoring Area" is defined as comprising Jack in the Box Creek to the north west of South Bandiana to its confluence with Wodonga Creek, an unnamed creek to the east of North Bandiana to its confluence with the Kiewa River, and the Kiewa River and western Kiewa River floodplain from Middle Creek in the south to north of the unnamed creek.

> The "Management Area" (MA) is defined as comprising the On-Site Monitoring Area and the Off-Site Monitoring Area.

The location of the Site (BMA), MA, the On-Site Monitoring Area and the Off-Site Monitoring Area are displayed in Figure 1 of Appendix A.

1.2 Purpose & Objectives

The objective of the OMP is to assess the changes in the nature and extent of PFAS within the environment, specifically where there is an identified potentially elevated risk to a receptor or a potential future risk to a receptor associated with Defence's historical use of Aqueous Film Forming Foam (AFFF).

The purpose of this PFAS OMP factual report is to provide an up-to-date status of the condition of the Site as it is currently understood in relation to the most recent sampling event.

The objectives of the report are:

> To provide a succinct summary of the October/November 2022 sampling event and provision of analytical results with supporting tables and figures.

> To provide confirmation of the current understanding of risk.

> To provide supporting data for the assessment of management actions, where relevant.

1.3 Relevant Guidelines

This assessment has been undertaken in general accordance with applicable industry standards for a site investigation for the purpose, objectives and scope identified in this report. These standards are set out in:

> Australian and New Zealand Guidelines, 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

> Australian Standard AS 4482-2005 *Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds*.

> Department of Defence, Department of Energy, 2018, *Quality System Manual Schedule B15*.

> Heads of Environmental Protection Authority's Australia and New Zealand (HEPA), 2020, *PFAS National Environmental Management Plan (NEMP),* Version 2.0, January 2020.

> National Environment Protection Council (NEPC), 1999, *National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013)* (ASC NEPM).

> National Health and Medical Research Council (NHMRC), 2019, *Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water*.

> Standards Australia, 1998, AS/NZ 5667:1998 *Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*.

> U.S. Environmental Protection Agency (EPA), 2006, '*Guidance for the Data Quality Objectives Process (EPA QA/G-4)*'.

> USEPA, 2002, '*Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8)'.*

2 Scope of Work

Cardno carried out the following tasks in order to satisfy the purpose and objectives of this assessment.

2.1 Review / Revision of the SAQP

Cardno undertook a review of the SAQP (Rev1.3; Cardno, 2022) prior to commencement of sampling and updated the methodology for HydraSleeve® replacement following sampling, sample collection from taps, and the addition of monitoring wells MW325 and MW328 to the scope of sampling if the blockage in MW326 is unable to be cleared. The SAQP will be reviewed and further revised as required prior to the next monitoring event scheduled for April 2023.

2.2 Groundwater Monitoring

Sampling of selected groundwater monitoring wells was performed in general accordance with the SAQP, applying methods set out in Section 3 of this report. The groundwater monitoring wells monitored as part of the OMP October/November 2022 biannual sampling event are presented in Table 2-1, and are shown in Figure 3, Appendix A.

Table 2-1 Groundwater Monitoring Locations

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Number of Monitoring Locations	Monitoring Well / Bore ID
Jack in the Box Creek	Annual (August to October)	On-Site	12*	MW051, MW311, MW315, MW317, MW318, MW319, MW321, MW323, MW326 and MW329. MW325 and MW328 (one-off sampling due to blockage in MW326).
		Off-Site	1	MW313.
	Biannual	On-Site	3	MW304, MW307, MW312.
		Off-Site	2	MW360, MW361.
Kiewa River	Annual (August to October)	On-Site	1	MW056.
		Off-Site	-	None.
	Biannual	On-Site	24	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_I, MW046_D, MW052, MW342, MW345, MW346, MW350_S, MW350_D, MW351, MW352, MW353, MW354, MW403 and MW404.
		Off-Site	3	MW356, MW357, OTH019.

* One-off sampling conducted at two wells due to blockage in MW326.

2.3 Surface Water Monitoring

The surface water sampling locations monitored as part of the OMP May 2022 biannual sampling event are presented in Table 2-2, and are shown in Figure 4, Appendix A.

Table 2-2 Surface Water Monitoring Locations

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Number of Monitoring Locations	Monitoring Location ID
Jack in the Box Creek	Annual	On-Site	-	None.
		Off-Site	-	None.
	Biannual	On-Site	16	SW302, SW307, SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, and SW448.
		Off-Site	7	SW424, SW427, SW430, SW431, SW432, SW434 and SW463.
Kiewa River	Annual	On-Site	-	None.
		Off-Site	-	None.
	Biannual	On-Site	12	SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW382, SW387 and SW388.
		Off-Site	18	SW390, SW393, SW395, SW396, SW397, SW398, SW400, SW401, SW403, SW404, SW405, SW409, SW412, SW416, SW462, SW470, SW471 and SW487.

2.4 Sediment Monitoring

No sediment sampling was undertaken as part of the October/November biannual sampling event. The sediment monitoring is undertaken annually (February to May) to correspond with surface water sampling in low flow condition.

2.5 Data Management

All the data included in the report have been collected, uploaded to the ESdat database and reviewed according to the data management requirements of the Defence Contamination Management Manual (DCMM) Annex L (Defence, 2021b).

2.6 Deviations from the OMP SAQP

Deviations from the SAQP were attributed to a lack of sampling media or access constraints, as summarised in Table 2-3. On-site and off-site sampling and testing was planned at 46 groundwater locations and 53 surface water locations but was only completed at 41 groundwater locations and 52 surface water locations. Further details of why sampling could not be completed at some locations are provided in Table 2-3.

Table 2-3 Deviations from the SAQP

Location	Deviation	Comment/Justification	Impact on Existing Dataset
Groundwater			
MW315	Not sampled	Location dry	Data gap. Well dry, no water evident with IP. Confirmed with bailer. This is considered to have a minor impact on the dataset as downstream locations have been sampled in this event, and concentrations have previously been less than the laboratory limit of reporting (LOR).
MW317	Not sampled	Location dry	Data gap. Well dry, no water evident with IP. Confirmed with bailer. This is considered to have a minor impact on the dataset as the well has been dry historically, downstream locations were sampled in this event, and concentrations have previously been below health based guidance values.
MW318	Not sampled	Location dry	Data gap. Well dry, no water evident with IP. Confirmed with bailer. This is considered to have a minor impact on the dataset as the well has been dry historically and never been sampled previously, and downstream locations were sampled in this event.
MW326	Not sampled	Obstruction in well	Data gap. Field crew attempted to clear the blockage again but were unsuccessful. This is considered to have a moderate impact on the dataset as well MW326 is considered to be a critical location by the LC. However, wells MW325 and MW328 were sampled as replacements to provide data upgradient and downgradient of MW326.
MW356	Not sampled	Location inaccessible / safety hazard	Data gap. Area completely flooded and a high flow from the Kiewa River made the location a safety risk. This is considered to have a minor impact on the dataset as downstream locations were sampled, and concentrations have previously been below health based guidance values.
OTH019	Sampled in second visit	Location inaccessible during first event	Location inaccessible during first event. Sampled 10/11 in second visit to site. This is considered to have a minimal impact on the dataset as the location was sampled in the second visit to site and concentrations were consistent with previous sampling.
MW313, MW319, MW321	Gauging data not available	Due to a software malfunction, the gauging data for these three wells was lost.	This is considered to have a minor impact on the dataset as gauging data was able to be recorded for all other wells and inferred groundwater flow direction was generally consistent with previous events.
All wells	A single gauging round at the start of the event was not completed	Limited access to monitoring well locations due to training exercises occurring on-Base and flooding affecting access to various areas.	This is considered to have a minor impact on the dataset. Gauging was completed across a single day within each area of the Base, and the inferred groundwater flow directions were generally consistent with previous events.
Surface Water			
SW302	Not Sampled	Location dry	Data gap. Location was dry, checked after the rainfall event and still dry.

Location	Deviation	Comment/Justification	Impact on Existing Dataset
			This is considered to have a minor impact on the dataset as the downstream locations were sampled during this event. The location has not been sampled previously as it has always been found to be dry.
SW393	Sampled in second visit	Location inaccessible / safety hazard during first event	During initial sampling in October, the area was flooded and unsafe to access. Road had been closed due to the flood water. An aggressive brown snake was also encountered while investigating the potential to walk to the location. Location sampled 10/11 in second visit to site when area was no longer flooded and safe to access. This is considered to have a minor impact on the dataset as the location was sampled in the second visit, and concentrations reported are consistent with previous sampling.
SW395	Sampled in second visit	Location inaccessible / safety hazard during first event	Location unable to be sampled during initial visit due to flooding in the area. Location sampled 10/11 in second visit to site when area was no longer flooded and safe to access. This is considered to have a minor impact on the dataset as the location was sampled in the second visit, and while PFOS and PFOS+PFHxS concentrations have increased to a new maximum, they are still comparable and within the same order of magnitude as historical concentrations.

3 Methodology

3.1 Groundwater Sampling Methodology

Groundwater monitoring was undertaken as detailed in Table 3-1.

Table 3-1 Groundwater Sampling Method

Activity	Details
Dates of Field Activity	10 to 15 October and 10 November 2022
Well Gauging	Standing Water Levels (SWL) were gauged using an interface probe. All wells were measured against a specified mark at the top of the well casing.
Groundwater Field Parameters	Groundwater water quality parameter field measurements (field parameters) were recorded with a water quality meter after sample collection using extra sample water from within the HydraSleeve® decanted into a clean jar. The following field parameters were recorded using a water quality meter: ▪ pH. ▪ Electrical conductivity (EC). ▪ Oxidation reduction potential (ORP). ▪ Dissolved oxygen (DO). ▪ Temperature. Field parameters measured by the water quality meter were recorded on field data records. All field instruments (e.g., water quality meter) were calibrated by the equipment supplier to optimise the accuracy of the measurements taken. Bump tests were also completed daily by field staff during the monitoring event. Calibration certificates and bump test records are provided in Appendix D.

Activity	Details
Deployment of HydraSleeve®	The HydraSleeves® were deployed with attached weights in order for sample collection to begin at the lowest point of the well screen. The HydraSleeves® from the previous event in May 2022 were disposed and replaced with new HydraSleeves® following the gauging of all wells and prior to sampling. HydraSleeves® were replaced again after completion of sampling at each location.
Retrieval of HydraSleeve® (Sample Collection)	HydraSleeve® sampling devices were left in wells for a minimum of 4 hours when deployed with bottom weights only, to allow restabilisation of the well following the slight disturbance caused by sampler deployment. For wells with a shallow water column, HydraSleeve® sampling devices were deployed with both top and bottom weights and were left in the well for a minimum of 24 hours, to allow the top weight time to compress the HydraSleeve® into the bottom of the well. Samples were collected via continuous pull method at a rate of approximately 30 cm per second, allowing the water to pass through the check value into the sample sleeve. Samples were discharged immediately (to minimise changes in chemistry) via discharge tube.
Sample collection by bailer or tap	As per the SAQP, where insufficient water was retrieved with the HydraSleeve®, samples were collected by bailer. For bailer sampling, wells were purged three bore volumes, or until dry, whichever is sooner, prior to sample collection. Where sampling of a well was required from a tap due to access constraints, the well was purged by running water from the tap for one minute prior to sample collection.
Decontamination procedure	Dedicated HydraSleeves® were used at each groundwater monitoring well, thus removing the need for decontamination. Where HydraSleeves® could not be used, dedicated bailers were used instead which also did not require decontamination. All re-usable sampling equipment (e.g., interface probe) was thoroughly washed using PFAS & phosphate-free detergent, then double rinsed with clean water before the sample collection.
Sample identification, preservation transport and holding times	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Samples were collected directly into appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (CoC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All groundwater samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Groundwater quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 water samples (five samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 water samples (five samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling equipment (e.g., interface probe)] (nine samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (five sample total).

3.2 Surface Water Sampling Methodology

Surface water monitoring was undertaken using a grab method as detailed in Table 3-2.

Table 3-2 Surface Water Sampling Method

Item	Details
Dates of Field Activity	10 to 15 October and 10 November 2022
Field parameters	Surface water field parameters (i.e., pH, EC, ORP, DO, and temperature) were recorded at the time of sampling using a pre-calibrated water quality meter. Field observations such as odours and flow were also recorded on field sampling sheets.
Sampling Method	Where possible, the samples were collected directly into sample containers. Where depth permits, sample bottles were positioned at least 10 cm below the surface water level and above the sediment bed and orientated with the opening facing downwards to avoid the collection of surface films. Where access to surface water was difficult, the sample was collected by attaching the sample bottles to a long-handled sampling device (telescopic pole) which was directly filled by lowering the sample bottle into the surface water body. The sample bottles were attached so that the telescopic pole was not in direct contact with the opening of the sample bottle. Samples were collected in accordance with Australian/New Zealand Standards (AS/NZS 5667.1:1998) '*Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples'*.
Decontamination	All re-usable sampling equipment (e.g., telescopic pole) were thoroughly washed using phosphate-free detergent (Liquinox), and subsequently double rinsed with de-ionised water before the sample collection.
Sample identification, preservation, transport and holding times.	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM (Defence, 2021b). Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (COC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All surface water samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Surface water quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 water samples (six samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 water samples (six samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling equipment (e.g., telescopic pole)] (eight samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (one sample total).

3.3 Quality Control / Quality Assurance

A critical aspect of site assessments is the demonstration of the quality of the data used as the basis for the assessment. This is achieved through a Data Validation process which includes a review of the following data quality indicators, as described in the SAQP:

> QA documentation.

> Bias.

> Data Representativeness.

- Data Precision & Accuracy.
- Data Comparability.
- Data Set Completeness.

A detailed review of these aspects has been undertaken, the results of which are presented in Appendix E. A summary of the data validation from the QA/QC review is included in Section 4.4 below.

3.4 Assessment Criteria

3.4.1 Groundwater and Surface Water

The adopted assessment criteria for groundwater and surface water are detailed in Table 3-3.

Table 3-3 Criteria for Groundwater and Surface Water

Exposure Scenario	Adopted Assessment Criteria		Guidance
	PFHxS / PFOS	PFOA	
	µg/L		
Human Health – Surface Water Recreational	2[2]	10	PFAS NEMP (HEPA, 2020)
Human Health – Drinking Water Quality Guideline[1]	0.07[2]	0.56	PFAS NEMP (HEPA, 2020)
Ecological (99% species protection – high conservation value systems)	0.00023[3,4]	19	PFAS NEMP (HEPA, 2020)
Ecological (95% species protection – slightly to moderately disturbed systems)	0.13[3]	220	PFAS NEMP (HEPA, 2020)

1. Drinking Water screening guidelines have been adopted for screening purposes for Industrial Water use, Stock Water use and Agriculture/Parks/Gardens Water use.
2. Combined PFOS and PFHxS.
3. PFOS only.
4. The criterion of 0.00023 µg/L is lower than the laboratory LOR, however, the PFAS NEMP (HEPA, 2020) allows for the adoption of the laboratory LOR as a screening level rather than a quantified measurement.

4 Field Observations and Results

4.1 Conditions Impacting the Sampling Event

In the seven days prior to the sampling event (3 to 9 October 2022), 36.8 mm of rain was recorded at the nearest weather station (082056), located in Wodonga. During the sampling event (10 to 15 October 2022), 59.0 mm of rain was recorded at weather station 082056. The total rainfall observed in October 2022 (187.8 mm) was significantly higher than the historical average of 91.2 mm (2020 to 2022). Significant flooding was encountered across the site due to the heavy rainfall prior to and during the October 2022 sampling event.

Sampling of surface water following a reasonable rain event (59 mm over five days) was able to be completed during this event and resulted in additional locations having sufficient water for sampling during this event, compared to the May 2022 event. However, due to the heavy rainfall during the event, some groundwater and surface water locations were inaccessible due to flooding. A few of these locations were able to be sampled during a subsequent visit to site on 10 November 2022.

The extensive flooding impacted sample collection at some locations and has the potential to impact on the results reported. No other on-site activities with the potential to impact sample collection or the results were noted.

4.2 Groundwater

4.2.1 Summary of Field Observations

4.2.1.1 Water quality parameter field measurements

Stabilised water quality parameter field measurements, water colour and turbidity observations recorded during the groundwater sampling program are presented in field sampling record sheets, included in Appendix D. Groundwater varied from clear to brown with low to high turbidity and water quality parameter field measurements were generally consistent with previous, with the exception of DO which was generally higher at the majority of monitoring well locations as compared to the May 2022 sampling event.

4.2.1.2 Groundwater Elevation and Migration

Groundwater elevation and flow direction across the three bases included in the PFAS OMP is summarised below:

- South Bandiana: Groundwater elevations observed at South Bandiana during the sampling event ranged from 160.153 mAHD at MW304 to 168.084 mAHD at MW329. Slight groundwater mounding was observed at MW329, which is consistent with previous sampling events. Groundwater flow is inferred to flow in a west to north-westerly direction toward the Jack in the Box Creek. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling event.
- North Bandiana: Groundwater elevations observed at North Bandiana during the sampling event ranged from 164.470 mAHD at MW345 to 166.906 mAHD at MW342. Groundwater flow is inferred to flow in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling event.
- East Bandiana: Groundwater elevations observed at East Bandiana during the sampling event ranged from 158.941 mAHD at MW046D to 161.947 mAHD at MW052. Groundwater flow is inferred to flow in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling event.

Groundwater elevation contours and flow directions for October 2022 are shown in Figure 2, Appendix A. Gauging data are presented in Appendix D.

4.2.2 Groundwater Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, and are presented in Table B1, Appendix B, and summarised in Table 4-1 below. Of the 41 primary samples that were tested, PFOA was reported above the LOR in 20 samples and PFOS+PFHxS and PFOS was reported above the LOR in 39 samples.

Table 4-1 Summary of Groundwater Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW051, MW052, MW056, MW304, MW307, MW311, MW312, MW313, MW319, MW321, MW323, MW325, MW328, MW329, MW342, MW345, MW346, MW350_D, MW350_S, MW351, MW352, MW353, MW354, MW357, MW360, MW361, MW403, MW404	0.00023[2]	82.4	39	39	MW346 (increase)
PFOA	MW035, MW042, MW307, MW350_S, MW403, MW404	0.56[1]	6.44	20	6	MW307 (decrease)

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS+PFHxS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW052, MW056, MW304, MW307, MW312, MW319, MW321, MW328, MW329, MW342, MW345, MW346, MW350_D, MW350_S, MW353, MW354, MW360, MW361, MW403, MW404	0.07[1]	156	39	33	MW346 (increase)

Note:
1. Drinking water assessment criteria
2. Ecological assessment criteria
3. Significant concentration change defined as an order of magnitude increase or decrease

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- MW307: PFOA has decreased by one order of magnitude from a previous result of 49.4 µg/L in May 2022 to 4.88 µg/L in this event.
- MW346: PFOS has increased by one order of magnitude from a previous result of <0.01 µg/L in May 2022 to 0.1 µg/L in this event. PFOS+PFHxS has also increased by one order of magnitude from a previous result of <0.01 µg/L in May 2022 to 0.17 µg/L in this event.

A summary of locations where a first-time detection, or a new exceedance of guideline values were reported is provided in Table 4-2 below. The laboratory reports are provided in Appendix C.

Table 4-2 Summary of Groundwater Results with First-time Detections or New Exceedances of Adopted Criteria

Deviation Type	Monitoring Well	PFOS+PFHxS concentration (µg/L)		PFOA concentration (µg/L)		PFOS concentration (µg/L)	
		October 2022	Previous Maximum	October 2022	Previous Maximum	October 2022	Previous Maximum
First-time detections	MW051	0.02[1]	<0.01	<0.01	<0.01	0.02[1]	<0.01
	MW304	**0.62**	**0.16[1]**	0.03	<0.02	**0.3**	**0.1[1]**
	MW328	**0.18**	<0.05	<0.01	<0.05	**0.13**	<0.05
	MW346	**0.17**	<0.01	<0.01	<0.01	**0.1**	<0.01
New exceedance of lowest adopted guideline values	MW328	**0.18**	<0.05	<0.01	<0.05	**0.13**	<0.05
	MW346	**0.17**	<0.01	<0.01	<0.01	**0.1**	<0.01

Note:
Location with first-time detection of PFOS+PFHxS, PFOA or PFOS in latest monitoring round
Location with a new exceedance of lowest adopted guideline values in latest monitoring round
Bold: Exceedance of lowest adopted guideline values
1. Result recorded on quality control (duplicate or split) sample

Findings are summarised as follows:

- Two groundwater sampling locations (MW328 and MW346) reported a new exceedance of the Drinking Water criterion for PFOS+PFHxS.
- Groundwater sample MW328 was re-analysed as a first-time detection was reported, which exceeded the Drinking Water criterion for PFOS+PFHxS (0.18 µg/L) and the Ecological criterion for PFOS (0.13 µg/L). The duplicate of MW328 reported concentrations of PFOS and PFOS+PFHxS below the laboratory LOR. This discrepancy is discussed further in the Data Quality Review, Appendix E.
- Three groundwater sampling locations (MW051, MW328 and MW346) reported a first-time detection of PFOS+PFHxS.
- One groundwater sampling location (MW304) reported a first-time detection of PFOA.
- Two groundwater sampling locations (MW328 and MW346) reported a first-time detection of PFOS.

4.3 Surface water

4.3.1 Summary of Field Observations

4.3.1.1 Water quality parameter field measurements

Stabilised water quality parameter field measurements, water colour and turbidity observations recorded during the surface water sampling program are presented in field sampling record sheets, included in Appendix D. Surface water varied from cloudy to brown with low to high turbidity and flow rate ranged from low to medium. Flow rates were generally similar to or increased compared to those observed in May 2022. Water levels were higher across all surface water locations and water was present at most locations due to high rainfall and extensive flooding prior to and during the sampling event in October 2022.

As noted in Section 4.1, during the October 2022 sampling event some on-site locations were unable to be sampled as they were dry and/or inaccessible due to flooding during the event. Two locations (SW393 and SW395) were able to be accessed and sampled during the second visit to site on 10 November 2022.

4.3.2 Surface Water Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, presented in Table B2, Appendix B, and summarised in Table 4-3 below. Of the 52 primary samples that were tested, PFOA was reported above the LOR in 20 samples, PFOS was reported above the LOR in 45 samples and PFOS+PFHxS was reported above the LOR in 46 samples.

Table 4-3 Summary of Surface Water Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS	SW307, SW310, SW311, SW313, SW316, SW321 SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW387, SW388, SW395, SW396, SW397, SW398, SW400, SW401, SW403, SW405, SW409, SW412, SW424, SW427, SW430, SW431, SW432, SW448, SW463, SW470, SW471, SW487	0.00023[2]	5.98	45	45	SW403 (decrease) SW427, SW430 (increase)
PFOA	-	0.56[1]	0.24	20	0	-

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS+PFHxS	SW307, SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW387, SW388, SW395, SW396, SW397, SW398, SW400, SW401, SW409, SW424, SW427, SW430, SW431, SW432, SW448, SW463, SW470, SW471, SW487	0.07[1]	7.21	46	42	SW403 (decrease) SW427, SW430 (increase)

Note:
1. Drinking water assessment criteria.
2. Ecological assessment criteria.
3. Significant concentration change defined as an order of magnitude increase or decrease.

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- SW403: PFOS has decreased by one order of magnitude from a previous result of 0.2 µg/L in May 2022 to 0.02 µg/L in this event. PFOS+PFHxS has also decreased by one order of magnitude from a previous result of 0.58 µg/L in May 2022 to 0.04 µg/L in this event.
- SW427: PFOS has increased by one order of magnitude from a previous result of 0.03 µg/L in May 2022 to 0.4 µg/L in this event. PFOS+PFHxS has also increased by one order of magnitude from a previous result of 0.03 µg/L in May 2022 to 0.53 µg/L in this event.
- SW430: PFOS has increased by one order of magnitude from a previous result of <0.01 µg/L in May 2022 to 0.13 µg/L in this event. PFOS+PFHxS has also increased by one order of magnitude from a previous result of <0.01 µg/L in May 2022 to 0.17 µg/L in this event.

A summary of locations where a first-time detection, or a new exceedance of guideline values were reported is provided in Table 4-4 below. The laboratory reports are provided in Appendix C.

Table 4-4 Summary of Surface Water Results of First-time Detections and New Exceedances of Adopted Criteria

Deviation Type	Monitoring Location	PFOS+PFHxS concentration (µg/L)		PFOA concentration (µg/L)		PFOS concentration (µg/L)	
		October 2022	Previous Maximum	October 2022	Previous Maximum	October 2022	Previous Maximum
New exceedance of lowest adopted guideline values	SW398	**0.08**	0.0009	<0.01	<0.01	**0.04**	**0.0009**

Note:
Location with first-time detection of PFOS+PFHxS, PFOA or PFOS in latest monitoring round
Location with a new exceedance of lowest adopted guideline values in latest monitoring round
Bold: Exceedance of lowest adopted guideline values

Findings are summarised as follows:

- One surface water sampling location (SW398) reported a new exceedance of the Drinking Water criterion for PFOS+PFHxS.
- No surface water samples reported a first-time detection in this event.

4.4 Data Validation

The data validation process has concluded that there are no significant systematic errors in the data collection process. Therefore, the data set used as the basis for the surface water and groundwater assessment are considered valid and complete. A detailed Data Quality Review is included in Appendix E.

5 Summary and Conclusions

Cardno conducted the October/November 2022 biannual groundwater and surface water monitoring event at BMA as part of the PFAS OMP. On-site and off-site sampling and testing was undertaken at 41 groundwater monitoring wells and 52 surface water locations.

Groundwater levels were gauged in all accessible wells before sampling. Groundwater flow was interpreted be generally consistent with May 2022 with flow in a west to north-westerly direction from South Bandiana towards Jack in the Box Creek, and flow in an easterly direction from North Bandiana and East Bandiana towards the Kiewa River.

Table 5-1 Summary of Results

Activity	Details
Deviations from OMP SAQP	> Three groundwater wells and one surface water location were not sampled due to locations being dry. > One groundwater well not sampled due to blockage in the well. > One groundwater well was not sampled due to location being inaccessible due to flooding. > Two surface water sampling locations and one groundwater well were not sampled in the first event due to the locations being inaccessible due to flooding but were sampled in a subsequent visit to site on 10 November 2022.
Groundwater Analytical Results	> 41 groundwater samples were collected in total. > Two samples reported a new exceedance of the Drinking Water criterion for PFOS+PFHxS. > Groundwater sample MW328 was re-analysed as a first-time detection was reported, which exceeded the Drinking Water criterion for PFOS+PFHxS and the Ecological criterion for PFOS. The duplicate of MW328 reported concentrations of PFOS and PFOS+PFHxS below the laboratory LOR. This discrepancy is discussed further in the Data Quality Review, Appendix E. > Three samples reported a first-time detection of PFOS+PFHxS. > One sample reported a first-time detection of PFOA. > Two samples reported a first-time detection of PFOS. > One groundwater sample reported an order of magnitude decrease for PFOA compared to the previous event. > One groundwater sample reported an order of magnitude increase for PFOS and PFOS+PFHxS compared to the previous event. > All other concentrations reported during this event were generally consistent with the previous sampling events.
Surface Water Analytical Results	> 52 surface water samples were collected in total. > One surface water sample reported a new exceedance of the Drinking Water assessment criterion for PFOS+PFHxS. > No samples reported a first-time detection. > One surface water sample reported an order of magnitude decrease for PFOS and PFOS+PFHxS compared to the previous event. > Two surface water samples reported an order of magnitude increase for PFOS and PFOS+PFHxS compared to the previous event. > All other concentrations reported during this event were generally consistent with previous sampling events.
Sediment Monitoring	> No sediment sampling was undertaken as part of August to October biannual sampling event. The sediment monitoring is undertaken annually (February to May) to correspond with surface water sampling in low flow condition.
Next Scheduled Monitoring Event	> The next OMP monitoring event is scheduled for April 2023. > SAQP to be reviewed and updated as required prior to the next monitoring event.

6 References

General References

1. Australian and New Zealand Guidelines (ANZG; 2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.
2. Defence (2021a), *PFAS OMP Factual Report Guidance*, Version 0.2, May 2021.
3. Defence (2021b), *Defence Contamination Management Manual (DCMM), Annex L – Data Management*, August 2018, Amended June 2021.
4. Environmental Protection Agency (United States EPA; 2002), EPA/240/R-02/004 *Guidance on Environmental Data Verification and Data Validation*, November 2002.
5. The Heads of EPAs Australia and New Zealand (HEPA; 2020), *PFAS National Environmental Management Plan (NEMP),* Version 2.0, January 2020.
6. National Environment Protection Council (NEPC; 2013), *National Environmental Protection (Assessment of Site Contamination) Measure* (as amended), registered May 2013.
7. National Health and Medical Research Council (2011 – updated 2018), *National Water Quality Management Strategy Australian Drinking Water Guidelines*, 6 August 2018.
8. Nation Health and Medical Research Council (NHMRC; 2019), *Guidance on Per and Poly-fluoroalkyl Substances (PFAS) in Recreational Water*, August 2019.
9. Standards Australia/Standards New Zealand (1998), AS5667.1:1998 *Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*.
10. Standards Australia (1999), AS4482.2-1999 *Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 – Non-volatile and semi-volatile compounds*.
11. USEPA (2006), *Guidance for the Data Quality Objectives Process*, EPA QA/G-4, U.S. Environmental Protection Agency.
12. USEPA (2002), *Guidance on Environmental Data Verification and Data Validation*, EPA QA/G-8, U.S. Environmental Protection Agency.

Site Specific References

13. Cardno (2022), *PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area*, Rev 1.3, 20 October 2022.
14. Golder (2018), *Detailed Site Investigation – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations*, 14 June 2018 (reference 1777738-081-R-RevB).
15. Golder (2020), *Human Health and Ecological Risk Assessment – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations*, November 2020 (reference 1777738-150-R-RevB).
16. Golder (2020a), *PFAS Management Area Plan – Bandiana Military Area*, November 2020 (reference 1777738-153-R-RevA-PMAP, Final, November2020).

APPENDIX A

FIGURES

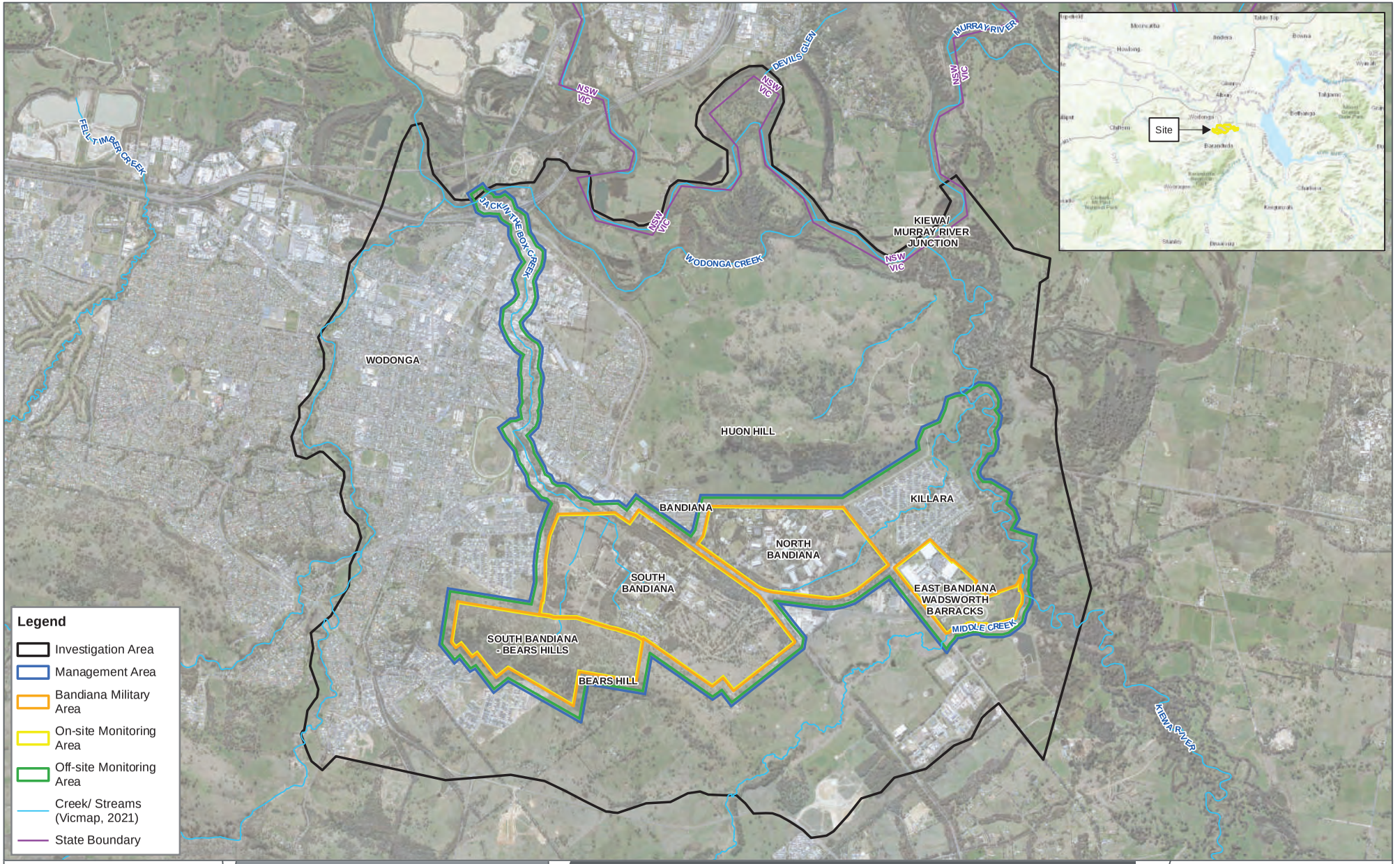


FIGURE 1

1:38,000 Scale at A3

Metres

0 1,000 2,000

Site Locality Plan

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2022-12-01 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0150-SiteLocalityPlan_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

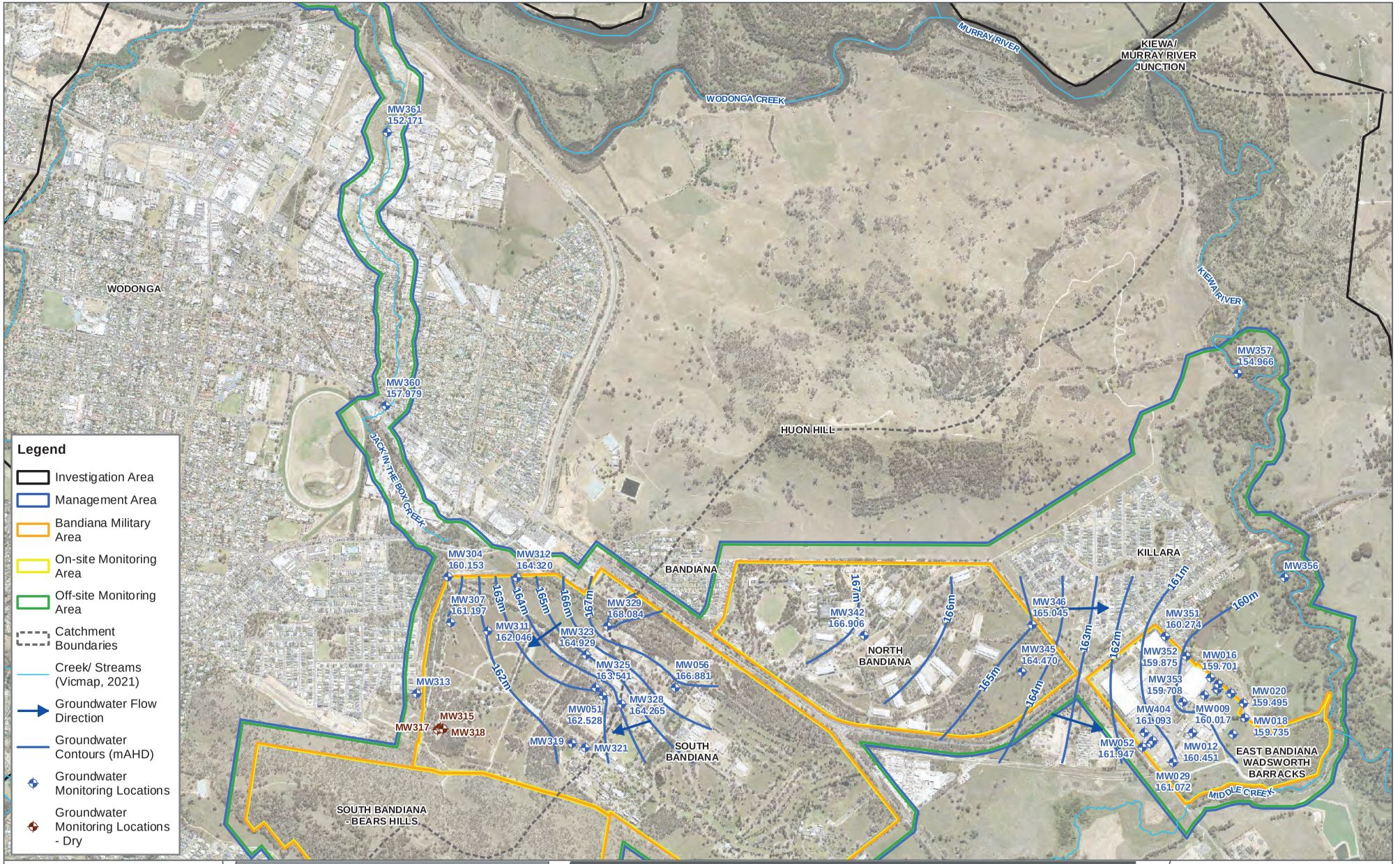


FIGURE 2

1:20,000 Scale at A3

Metres

0 500 1,000

Groundwater Elevation Contours (October/ November, 2022)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-02-08 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-G S-0256-GW_ElevContours_RegionalA_B_E3.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

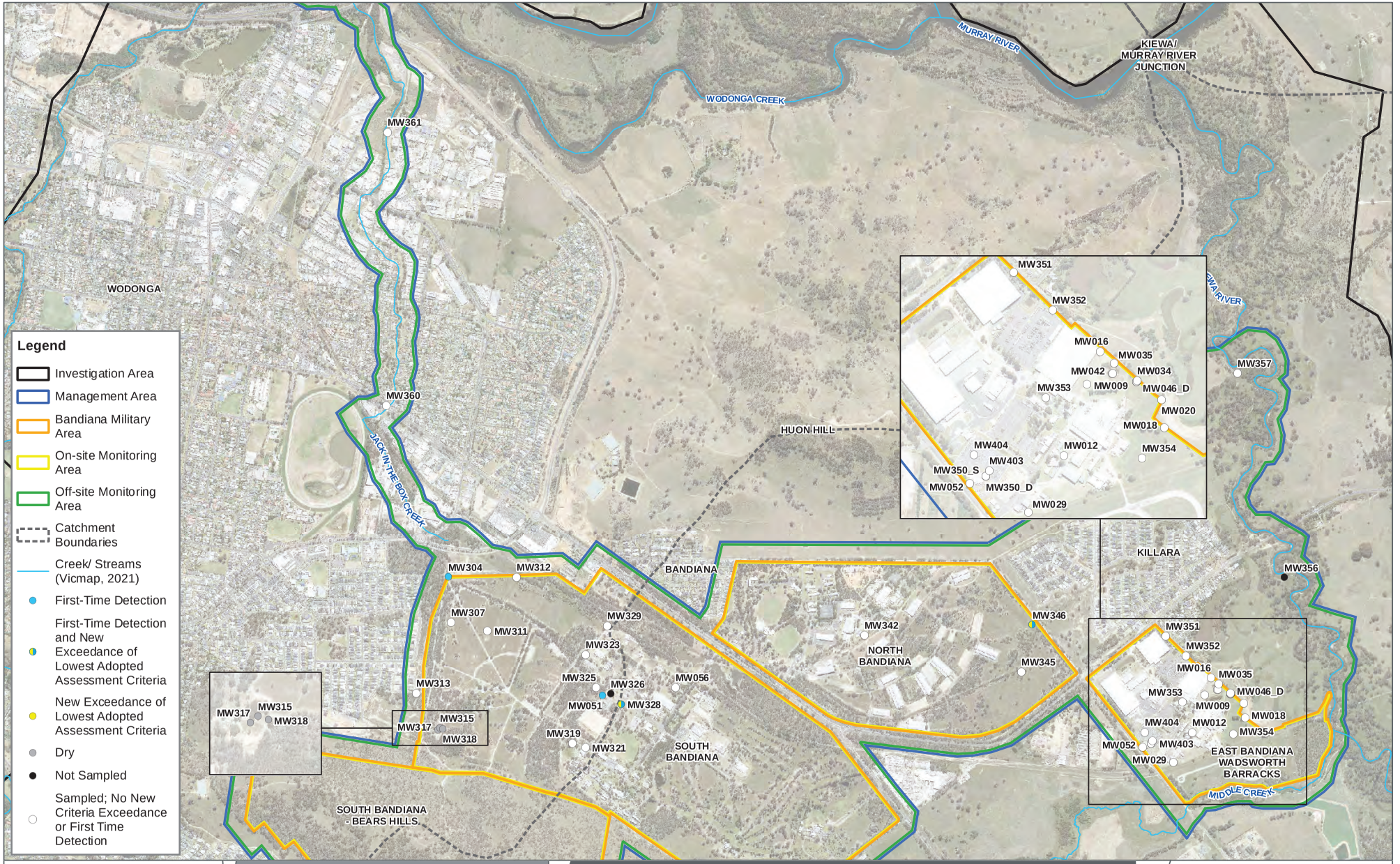


FIGURE 3

1:20,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Groundwater (October/November, 2022)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-02-08 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0257-GW_ConcNotification_B_E3.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

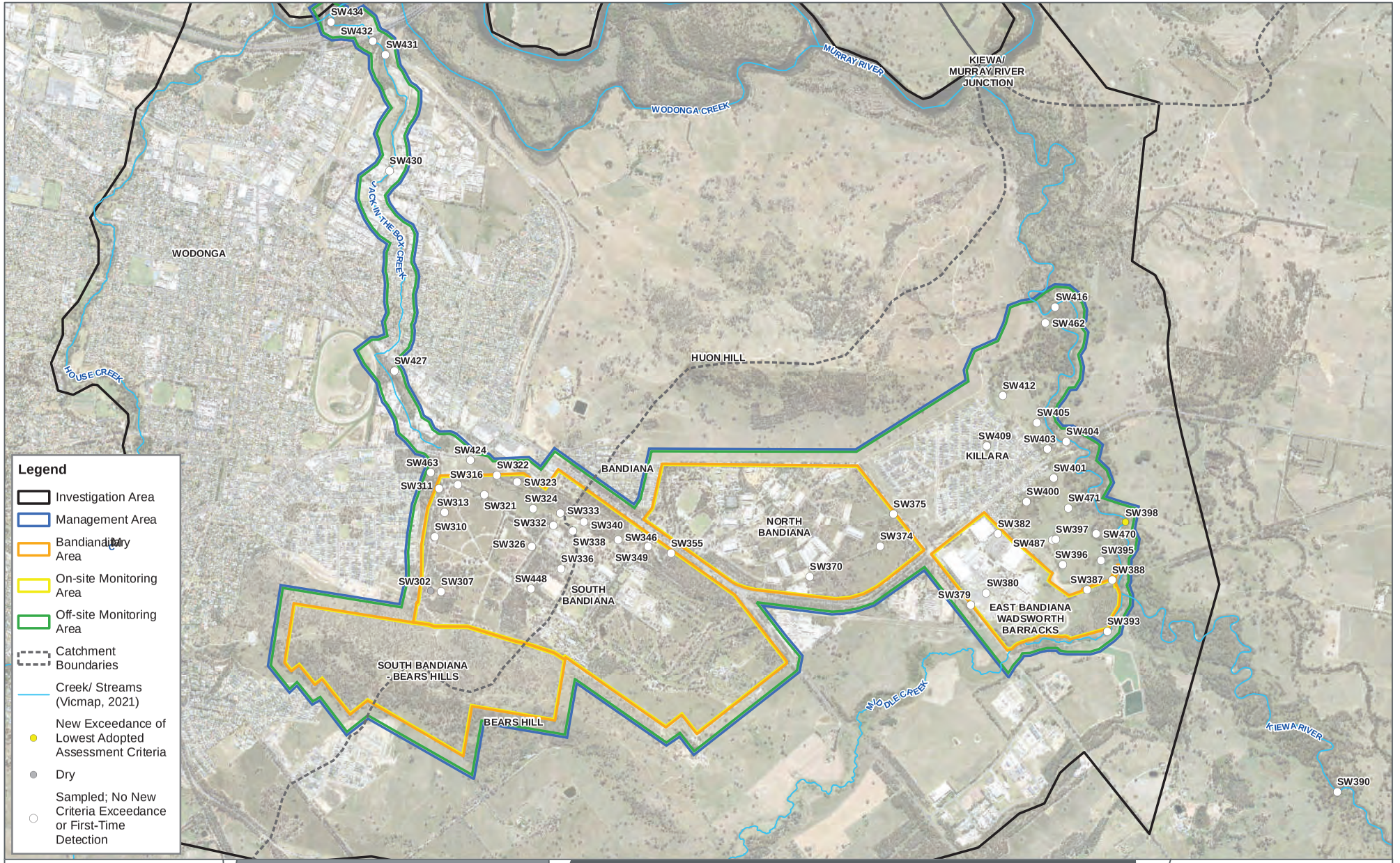


FIGURE 4

1:26,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Surface Water (October/ November, 2022)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2022-12-12 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0258-SWConcNotification_B_E3.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

APPENDIX

B

DATA ASSESSMENT TABLES

																		Perfluorocarbons									
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L
EQL						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																			
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																			
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																				
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																				
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																						
MW009	On-base	28/11/2017	0445E_MW09_S_171128	Normal	ES1730397	3.32	0.45	9.92	1.28	1.4	6.6	0.3	<0.02	0.3	0.4	1.85	0.29	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW009_211116	Normal	EM2122998	2.67	0.43	6.81	0.95	0.86	4.14	0.45	<0.02	0.2	0.34	1.36	0.25	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		5/05/2022	0445_MW009_220505	Normal	EM2208381	3.5	0.44	9.69	0.99	1.11	6.19	0.37	<0.02	0.2	0.4	1.32	0.29	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW009_221013	Normal	EM2220286	3.16	0.35	8.31	0.82	0.82	5.15	0.32	<0.02	0.2	0.28	1.22	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW012	On-base	28/11/2017	0445E_MW12_S_171128	Normal	ES1730397	0.04	<0.01	0.3	<0.02	<0.02	0.26	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445E_QC100_171128	Field_D	ES1730397	0.05	<0.01	0.37	<0.02	<0.02	0.32	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/11/2021	0445_MW012_211111	Normal	EM2122518	0.07	<0.01	0.43	<0.02	<0.02	0.36	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		5/05/2022	0445_MW012_220505	Normal	EM2208381	0.09	<0.01	0.54	0.02	0.03	0.45	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW012_221013	Normal	EM2220286	0.03	<0.01	0.18	0.03	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW016	On-base	28/11/2017	0445E_MW16_S_171128	Normal	ES1730397	7.35	0.39	11.6	0.62	0.66	4.22	0.32	<0.02	0.1	0.2	0.95	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW016_211116	Normal	EM2122998	4.38	0.31	7.42	0.4	0.4	3.04	0.25	<0.02	<0.1	0.16	0.68	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		9/05/2022	0445_MW016_220509	Normal	EM2208649	6.14	0.33	9.36	0.45	0.42	3.22	0.27	<0.02	<0.1	0.16	0.61	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW016_221013	Normal	EM2220286	4.93	0.29	7.78	0.4	0.42	2.85	0.21	<0.02	<0.1	0.13	0.65	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW018	On-base	28/11/2017	0445E_MW18_S_171128	Normal	ES1730397	0.13	<0.01	0.31	0.02	<0.02	0.18	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW018_211116	Normal	EM2122998	0.32	<0.01	0.67	0.06	0.05	0.35	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		5/05/2022	0445_MW018_220505	Normal	EM2208381	0.33	<0.01	0.66	0.06	0.05	0.33	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW018_221013	Normal	EM2220286	0.06	<0.01	0.16	0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW020	On-base	28/11/2017	0445E_MW20_S_171128	Normal	ES1730397	0.72	0.05	2.34	0.11	0.14	1.62	0.05	<0.02	<0.1	0.03	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW020_211116	Normal	EM2122998	1.54	0.07	3.38	0.15	0.16	1.84	0.09	<0.02	<0.1	0.05	0.23	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		3/05/2022	0445_MW020_220503	Normal	EM2208381	1.29	0.06	2.77	0.13	0.15	1.48	0.07	<0.02	<0.1	0.05	0.17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW020_221013	Normal	EM2220286	1.15	0.05	2.42	0.09	0.11	1.27	0.06	<0.02	<0.1	0.03	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW029	On-base	11/12/2017	0445E_MW29_S_171211	Normal	ES1731478	0.38	0.04	0.87	0.12	0.11	0.49	<0.02	<0.02	<0.1	0.19	0.22	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/11/2021	0445_MW029_211111	Normal	EM2122518	0.44	0.06	1.15	0.13	0.13	0.71	0.02	<0.02	<0.1	0.16	0.25	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		5/05/2022	0445_MW029_220505	Normal	EM2208381	0.64	0.05	1.28	0.18	0.14	0.64	<0.02	<0.02	<0.1	0.22	0.29	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW029_221013	Normal	EM2220286	0.43	0.03	0.87	0.06	0.06	0.44	<0.02	<0.02	<0.1	0.07	0.13	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW034	On-base	28/11/2017	0445E_MW34_S_171128	Normal	ES1730397	0.73	0.06	1.59	0.1	0.12	0.86	0.02	<0.02	<0.1	0.04	0.13	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW034_211116	Normal	EM2122998	1.86	0.12	3.46	0.26	0.21	1.6	0.13	<0.02	<0.1	0.09	0.34	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		3/05/2022	0445_MW034_220503	Normal	EM2208381	1.57	0.06	2.57	0.14	0.14	1	0.08	<0.02	<0.1	0.06	0.16	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC106_220503	Field_D	EM2208381	1.27	0.06	2.35	0.13	0.14	1.08	0.07	<0.02	<0.1	0.05	0.16	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC206_220505	Interlab_D	886780	2.1	0.09	3.3	0.14	0.15	1.2	0.06	<0.01	<0.05	0.05	0.2	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW034_221013	Normal	EM2220286	1.17	0.05	1.93	0.09	0.09	0.76	0.05	<0.02	<0.1	0.03	0.12	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW035	On-base	28/11/2017	0445E_MW35_S_171128	Normal	ES1730397	3.97	0.54	12.1	1.72	1.74	8.16	0.39	<0.02	0.4	0.55	2.4	0.41	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW035_211116	Normal	EM2122998	3.32	0.45	7.45	0.93	0.87	4.13	0.39	<0.02	0.2	0.34	1.41	0.26	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		3/05/2022	0445_MW035_220503	Normal	EM2208381	5.07	0.59	12.4	1.16	1.27	7.38	0.49	<0.02	0.2	0.48	1.62	0.35	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW035_221013	Normal	EM2220286	5.96	0.59	14.5	1.29	1.39	8.51	0.58	<0.02	0.2	0.44	1.98	0.34	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW042	On-base	28/11/2017	0445E_MW42_D_171128	Normal	ES1730397	5.66	0.7	15.4	1.99	2.07	9.76	0.5	<0.02	0.4	0.64	2.88	0.47	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/11/2021	QC204_211111	Interlab_D	841785	4.3	0.65	11.3	1.2	0.96	7	0.57	<0.01	0.33	0.36	1.9	0.32	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
			0445_MW042_211111	Normal	EM2122518	3.61	0.49	8.66	0.92	1.13	5.05	0.49	<0.02	0.2	0.35	1.62	0.31	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC104_211111	Field_D	EM2122518	3.3	0.46	8.79	0.99	0.81	5.49	0.38	<0.04	<0.2	0.33	1.52	0.24	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09
		3/05/2022	0445_MW042_220503	Normal	EM2208381	6.03	0.66	15.4	1.42	1.57	9.35	0.56	<0.02	0.3	0.59	2.02	0.43	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW042_221013	Normal	EM2220286	6.41	0.6	15.1	1.29	1.4	8.7	0.59	<0.02	0.2	0.44	2.13	0.34	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW043	On-base	28/11/2017	0445E_MW43_I_171128	Normal	ES1730397	10.5	1.09	32	3.11	3.28	21.5	0.88	<0.02	0.7	1.06	4.85	0.71	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW043_211116	Normal	EM2122998	5.33	0.76	12.9	1.6	1.73	7.54	0.81	<0.02	0.4	0.61	2.51	0.43	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		3/05/2022	0445_MW043_220503	Normal	EM2208381	6.91	0.7	16.6	1.52	1.63	9.65	0.59	<0.02	0.3	0.64	2.04	0.44	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW043_221013	Normal	EM2220286	8.1	0.53	16	1.14	1.2	7.92	0.54	<0.02	0.2	0.41	1.81	0.31	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW046_D	On-base	28/11/2017	0445E_MW46_D_171128	Normal	ES1730397	2.05	0.14	4.31	0.34	0.36	2.26	0.14	<0.02	<0.1	0.12	0.49	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		3/05/2022	0445_MW046D_220503	Normal	EM2208381	2.88	0.16	4.97	0.37	0.3	2.09	0.17	<0.02	<0.1	0.14	0.41	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW046_D_221013	Normal	EM2220286	1.6	0.06	2.77	0.13	0.13	1.17	0.07	<0.02	<0.1	0.05	0.21	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW046_I	On-base	28/11/2017	0445E_MW47_I_171128	Normal	ES1730397	1.99	0.16	4.27	0.32	0.35	2.28	0.14	<0.02	<0.1	0.12	0.5	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		4/05/2022	0445_MW046I_220503	Normal	EM2208381	2.17	0.1	3.59	0.2	0.2	1.42	0.11	<0.02	<0.1	0.08	0.24	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW046_I_221013	Normal	EM2220286	1.76	0.06	2.98	0.13	0.14	1.22	0.08	<0.02	<0.1	0.04	0.2	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05

Perfluorocarbons

Location_Code	Location_Type	Sampled_Date_Time	Field_ID	Sample_Type	Lab_Report_Number	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)
						μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	mg/L	μg/L
EQL						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water							0.56	0.07																			
PFAS NEMP 2.0 Table 1 Health Recreational Water							10	2																			
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																				
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																				
MW051	On-base	4/12/2017	0445S_MW04_S_171204	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.00012	<0.12
		10/11/2021	QC200_211110	Interlab_D	841785	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
			0445_MW051_211110	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC100_211110	Field_D	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_QC204_221012	Interlab_D	932350	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
			0445_MW051_20221012	Normal	EM2220286	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC104_20221012	Field_D	EM2220286	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW052	On-base	1/06/2012	0445E_MW06-A_120601	Normal	ES1213811	1.24	**0.94**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			0445E_QC103_120601	Field_D	ES1213811	1.18	**0.91**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7/03/2017	0445_MW06_070307	Normal	163195	6.6	**3.2**	-	-	-	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		11/12/2017	0445E_MW06A_S_171211	Normal	ES1731478	7.17	**1.37**	***26.5***	2.86	3.18	19.3	0.45	<0.02	0.6	1.24	4.23	0.98	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW052_211116	Normal	EM2122998	7.23	**0.67**	***11***	0.96	0.86	3.81	0.5	<0.02	0.3	0.39	1.6	0.36	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		5/05/2022	0445_MW052_220505	Normal	EM2208381	9.31	**0.63**	***14.4***	1.31	1.2	5.08	0.32	<0.02	0.3	0.5	2.14	0.61	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		14/10/2022	0445_MW052_221014	Normal	EM2220286	10.4	0.46	***13.7***	0.6	0.57	3.3	0.32	<0.02	0.2	0.2	1.04	0.28	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW056	On-base	29/11/2017	0445S_BH111_P_171129	Normal	ES1730510	0.97	0.31	**1.71**	0.14	0.22	0.74	0.15	<0.02	<0.1	<0.02	0.23	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/11/2021	0445_MW056_211111	Normal	EM2122518	0.7	0.15	**1.5**	0.18	0.19	0.8	0.07	<0.02	<0.1	0.02	0.14	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_QC205_221012	Interlab_D	932350	0.84	0.1	**1.41**	0.12	0.12	0.57	0.04	<0.01	<0.05	0.02	0.09	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		12/10/2022	0445_MW056_221012	Normal	EM2220286	0.66	0.08	**1.08**	0.09	0.1	0.42	0.03	<0.02	<0.1	<0.02	0.07	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_QC105_20221012	Field_D	EM2220286	0.3	0.04	**0.53**	0.05	0.05	0.23	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW304	On-base	6/12/2017	0445s_MW304_S_171206	Normal	ES1731108	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/11/2021	0445_MW304_211110	Normal	EM2122518	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		4/05/2022	0445_MW304_220504	Normal	EM2208381	0.06	<0.02	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC107_220504	Field_D	EM2208381	0.07	<0.02	**0.12**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC207_220504	Interlab_D	886780	0.1	<0.01	**0.16**	<0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		10/10/2022	0445_MW304_20221010	Normal	EM2220286	0.3	0.03	**0.62**	0.05	0.03	0.32	0.06	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW307	On-base	6/12/2017	0445s_MW307_S_171206	Normal	ES1731108	0.25	0.01	**0.37**	0.02	<0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445s_QC110_171206	Field_D	ES1731108	0.25	0.01	**0.35**	<0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/11/2021	0445_MW307_211110	Normal	EM2122518	70.4	***34.2***	***422***	87.7	61.2	352	28.4	<0.04	7.1	57.5	140	23	0.48	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09
		22/12/2021	0445_MW307_211222	Normal	EM2125903	94.3	***44.2***	***590***	107	97.6	496	41.2	<0.05	13.4	71.3	170	31.5	0.6	<0.05	<0.05	<0.05	<0.05	<0.14	<0.05	<0.14	<0.00014	<0.14
			0445_QC101_211222	Field_D	EM2125903	91	***44.8***	***577***	110	85.9	486	38.6	<0.05	12.4	71	168	32.1	0.6	<0.05	<0.05	<0.05	<0.05	<0.13	<0.05	<0.13	<0.00013	<0.13
			0445_QC201_211222	Interlab_D	852797	66	**8.9**	***456***	68	74	390	27	<0.01	4.5	16	39	9.5	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		4/05/2022	0445_MW307_220504	Normal	EM2208381	88.8	***49.4***	***644***	119	115	555	55.6	<0.04	16.1	72.7	221	35.5	0.62	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09
		10/10/2022	0445_MW307_221010	Normal	EM2220286	13.7	**4.88**	***72***	10.9	10.6	58.3	5.98	<0.02	0.9	7.32	17.3	3.06	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW311	On-base	5/12/2017	0445S_MW311_S_171205	Normal	ES1731167	0.02	<0.01	**0.09**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445S_QC108_171205	Field_D	ES1731167	0.02	<0.01	**0.09**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		17/11/2021	0445_MW311_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/10/2022	0445_MW311_221010	Normal	EM2220286	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW312	On-base	6/12/2017	0445s_MW312_S_171206	Normal	ES1731108	<0.01	<0.01	**0.12**	0.02	0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/11/2021	0445_MW312_21110	Normal	EM2122518	0.02	<0.01	**0.16**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		4/05/2022	0445_MW312_220504	Normal	EM2208381	<0.01	<0.01	**0.1**	<0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/10/2022	0445_MW312_221010	Normal	EM2220286	0.04	<0.01	**0.15**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW313	Off-base	9/12/2017	0445_MW313_D_171209	Normal	ES1731468	0.0039	<0.0005	0.0052	<0.0005	<0.0005	0.0013	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
		11/11/2021	0445_MW313_211111	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		15/10/2022	0445_MW313_221015	Normal	EM2220271	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW315	On-base	6/12/2017	0445s_MW315_D_171206	Normal	ES1731108	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		17/11/2021	0445_MW315_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW317	On-base	6/12/2017	0445s_MW317_D_171206	Normal	ES1731108	0.05	<0.01	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05

Location_Code	Location_Type	Sampled_Date_Time	Field_ID	Sample_Type	Lab_Report_Number	Perfluorocarbons																					
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L
EQL						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																			
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																			
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																				
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																				
MW319	On-base	4/12/2017	0445S_MW319_D_171204	Normal	ES1731167	0.22	<0.01	**0.31**	0.03	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/11/2021	QC201_211110	Interlab_D	841785	0.39	<0.01	**0.51**	0.01	<0.01	0.12	<0.01	<0.01	<0.05	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
			0445_MW319_211110	Normal	EM2122518	0.28	<0.01	**0.37**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC101_211110	Field_D	EM2122518	0.31	<0.01	**0.39**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_QC203_221012	Interlab_D	932350	0.22	<0.01	**0.28**	<0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
			0445_MW319_221012	Normal	EM2220286	0.2	<0.01	**0.26**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC103_20221012	Field_D	EM2220286	0.24	<0.01	**0.31**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW321	On-base	5/12/2017	0445S_MW321_S_171205	Normal	ES1731167	6.01	0.1	***7.65***	0.05	0.06	1.64	0.38	<0.02	<0.1	0.02	0.16	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/11/2021	0445_MW321_211110	Normal	EM2122518	0.73	<0.01	**0.92**	<0.02	<0.02	0.19	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_QC202_221012	Interlab_D	932350	0.07	<0.01	**0.09**	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
			0445_MW321_221210	Normal	EM2220286	0.58	<0.01	**0.75**	<0.02	<0.02	0.17	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC102_20221012	Field_D	EM2220286	0.55	<0.01	**0.7**	<0.02	<0.02	0.15	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW323	On-base	30/11/2017	0445S_MW323_S_171130	Normal	ES1730642	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445S_QC104_S_171130	Field_D	ES1730642	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445S_QC204_171130	Interlab_D	575864	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		10/11/2021	0445_MW323_211110	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_MW323_221210	Normal	EM2220286	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW325		4/12/2017	0445S_MW325_S_171204	Normal	ES1731167	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		14/10/2022	0445_MW325_221014	Normal	EM2220286	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW326	On-base	4/12/2017	0445S_MW326_S_171204	Normal	ES1731167	0.03	<0.01	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/11/2021	0445_MW326_211110	Normal	EM2122518	0.03	<0.01	**0.29**	0.46	0.11	0.26	<0.02	<0.02	<0.1	0.05	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW328		4/12/2017	0445S_MW328_D_171204	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.00012	<0.12
		14/10/2022	0445_MW328_221014	Normal	EM2220286	0.13	<0.01	**0.18**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_MW328_221014_DUP	Normal	EM2220286	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW329	On-base	4/12/2017	0445S_MW329_S_171204	Normal	ES1731167	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/11/2021	QC202_211110	Interlab_D	841785	0.03	<0.01	**0.19**	0.04	0.03	0.16	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		10/11/2021	0445_MW329_21110	Normal	EM2122518	0.03	<0.01	**0.17**	0.04	0.03	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/11/2021	0445_QC102_211110	Field_D	EM2122518	0.03	<0.01	**0.17**	0.04	0.03	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_MW329_221012	Normal	EM2220286	0.03	<0.01	**0.37**	0.2	0.1	0.34	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW342	On-base	7/12/2017	0445N_MW342_S_171207	Normal	ES1731478	<0.01	<0.01	**0.09**	0.03	0.04	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/11/2021	0445_MW342_211111	Normal	EM2122518	9.21	0.22	***13.5***	0.88	0.53	4.31	0.36	<0.02	<0.1	0.24	0.95	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		22/12/2021	0445_MW342_211222	Normal	EM2125903	4.15	0.2	***9.15***	0.94	0.78	5	0.36	<0.02	0.1	0.24	1.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC100_211222	Field_D	EM2125903	4.37	0.21	***9.48***	0.89	0.7	5.11	0.37	<0.02	0.1	0.24	1.13	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC200_211222	Interlab_D	852797	5.8	0.32	***12.6***	1.1	1	6.8	0.41	<0.01	0.2	0.3	1.4	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		6/05/2022	0445_MW342_220506	Normal	EM2208381	4	0.16	***8.59***	0.68	0.51	4.59	0.26	<0.02	<0.1	0.22	0.81	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC111_220506	Field_D	EM2208381	3.97	0.17	***8.58***	0.74	0.53	4.61	0.26	<0.02	<0.1	0.22	0.75	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC211_220506	Interlab_D	886780	4.9	0.21	***11.3***	0.91	0.75	6.4	0.28	<0.01	0.14	0.19	0.88	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		15/10/2022	0445_MW342_221015	Normal	EM2220286	3.04	0.11	***5.93***	0.46	0.39	2.89	0.14	<0.02	<0.1	0.12	0.58	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW345	On-base	7/12/2017	0445N_MW345_S_171207	Normal	ES1731478	0.1	<0.01	**0.3**	<0.02	0.03	0.2	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		17/11/2021	0445_MW345_211117	Normal	EM2122998	0.02	<0.01	**0.25**	0.06	0.05	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		6/05/2022	0445_MW345_220506	Normal	EM2208381	0.03	<0.01	**0.24**	0.04	0.03	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_MW345_221014	Normal	EM2220286	0.08	<0.01	**0.32**	0.05	0.04	0.24	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW346	On-base	7/12/2017	0445N_QC212_171207	Normal	577514	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		7/12/2017	0445N_MW346_S_171207	Normal	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/12/2017	0445N_QC112_171207	Field_D	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW346_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		6/05/2022	0445_MW346_220506	Normal	EM2208381	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_MW346_221012	Normal	EM2220286	0.1	<0.01	**0.17**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05

																	Perfluorocarbons										
																	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)
																	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L
EQL																	0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		**0.56**	**0.07**																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		*10*	*2*																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																	0.13	220																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																	0.00023	19																			
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																																
MW350_D	On-base	10/12/2017	0445E_MW350_D_171210	Normal	ES1731478	0.27	0.02	**0.63**	<0.02	0.06	0.36	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/11/2021	0445_MW350_D_211111	Normal	EM2122518	0.33	0.02	**0.6**	0.04	0.03	0.27	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		3/05/2022	0445_MW350_D_220503	Normal	EM2208381	0.28	0.02	**0.53**	0.1	0.04	0.25	0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		14/10/2022	0445_MW350_D_221014	Normal	EM2220286	0.32	0.02	**0.62**	0.1	0.04	0.3	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW350_S	On-base	10/12/2017	0445E_MW350_S_171210	Normal	ES1731478	15.2	**4.24**	***90.2***	7.42	10.4	75	2.02	<0.02	1.9	4.72	14	1.87	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/11/2021	QC205_211111	Interlab_D	841785	19	**2.8**	***69***	4	5	50	2.8	<0.01	0.95	1.3	7	1.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		11/11/2021	0445_MW350_S_211111	Normal	EM2122518	15.3	**3.05**	***48.7***	3.62	2.6	33.4	2.86	<0.04	0.6	1.39	5.72	1.16	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09
		11/11/2021	0445_QC105_211111	Field_D	EM2122518	15.2	**3.06**	***48.9***	3.65	2.7	33.7	2.91	<0.04	0.9	1.45	5.86	1.24	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09
		6/05/2022	0445_MW350_S_220506	Normal	EM2208381	17.8	**2.67**	***43.4***	2.43	2.69	25.6	2.32	<0.02	0.8	1.71	4.45	1.33	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		14/10/2022	0445_MW350_S_221014	Normal	EM2220286	19.3	**1.74**	***37.2***	1.37	1.89	17.9	1.93	<0.02	0.4	0.99	3.51	0.62	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW351	On-base	11/12/2017	0445E_MW351_S_171211	Normal	ES1731478	0.03	<0.01	0.07	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW351_211116	Normal	EM2122998	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		3/05/2022	0445_MW351_220503	Normal	EM2208381	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC100_220503	Field_D	EM2208381	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC200_220503	Interlab_D	886780	0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW351_221013	Normal	EM2220286	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW352	On-base	11/12/2017	0445E_MW352_S_171211	Normal	ES1731478	0.02	<0.01	**0.10**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW352_211116	Normal	EM2122998	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		3/05/2022	0445_MW352_220503	Normal	EM2208381	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW352_221013	Normal	EM2220286	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW353	On-base	11/12/2017	0445E_MW353_S_171211	Normal	ES1731478	3.14	0.32	***8.98***	0.7	0.76	5.84	0.27	<0.02	<0.1	0.26	0.86	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/11/2021	0445_MW353_211111	Normal	EM2122518	3.85	0.22	***7.05***	0.46	0.43	3.2	0.26	<0.02	<0.1	0.13	0.53	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		5/05/2022	0445_MW353_220505	Normal	EM2208381	3.1	0.18	***5.93***	0.4	0.4	2.83	0.21	<0.02	<0.1	0.11	0.37	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW353_221013	Normal	EM2220286	2.54	0.14	***4.94***	0.3	0.34	2.4	0.16	<0.02	<0.1	0.06	0.35	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW354	On-base	11/12/2017	0445E_MW354_S_171211	Normal	ES1731478	0.03	<0.01	**0.17**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445E_QC116_171211	Field_D	ES1731478	0.1	0.01	**0.27**	0.03	0.04	0.17	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		16/11/2021	0445_MW354_211116	Normal	EM2122998	0.15	0.01	**0.38**	0.04	0.03	0.23	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		5/05/2022	0445_MW354_220505	Normal	EM2208381	0.11	<0.01	**0.21**	0.03	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		13/10/2022	0445_MW354_221013	Normal	EM2220286	0.08	<0.01	**0.15**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW356	Off-base	9/12/2017	0445_MW356_S_171209	Normal	ES1731468	0.0009	<0.0005	0.0019	<0.0005	<0.0005	0.001	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
		12/11/2021	0445_MW356_211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		7/05/2022	0445_MW356_220505	Normal	EM2208383	<0.01	<0.01	0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW357	Off-base	9/12/2017	0445_MW357_S_171209	Normal	ES1731468	0.0262	0.0011	**0.111**	0.0082	0.0089	0.0844	0.0018	<0.0005	<0.002	0.001	0.004	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
			0445_QC114_171209	Field_D	ES1731468	0.0254	0.0011	**0.104**	0.0064	0.0097	0.0788	0.0018	<0.0005	<0.002	0.0006	0.0025	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
		12/11/2021	0445_MW357_211112	Normal	EM2122519	0.03	<0.01	0.07	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		6/05/2022	0445_MW357_220506	Normal	EM2208383	0.01	<0.01	0.04	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/10/2022	0445_MW357_221012	Normal	EM2220271	0.02	<0.01	0.06	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05

Location_Code	Location_Type	Sampled_Date_Time	Field_ID	Sample_Type	Lab_Report_Number	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)
						Perfluorocarbons																					
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L
EQL						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																			
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																			
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																				
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																				
MW360	Off-base	9/12/2017	0445_MW360_S_171209	Normal	ES1731468	0.0836	0.0009	**0.232**	0.0087	0.0173	0.148	0.0048	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
		11/11/2021	0445_MW360_211111	Normal	EM2122519	0.06	<0.01	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		6/05/2022	0445_MW360_220506	Normal	EM2208383	0.05	<0.01	**0.11**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		15/10/2022	0445_MW360_221015	Normal	EM2220271	0.08	<0.01	**0.17**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW361	Off-base	9/12/2017	0445_MW361_S_171209	Normal	ES1731468	0.0488	0.0098	**0.296**	0.011	0.0166	0.247	0.0053	<0.0005	<0.002	0.0155	0.0199	0.0096	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
			0445_QC115_171209	Field_D	ES1731468	0.0454	0.0099	**0.282**	0.0094	0.0141	0.237	0.005	<0.0005	<0.002	0.0072	0.0206	0.0093	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
		11/11/2021	0445_MW361_211111	Normal	EM2122519	0.08	0.01	**0.21**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		7/05/2022	0445_MW361_220506	Normal	EM2208381	0.07	0.01	**0.21**	0.02	<0.02	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		15/10/2022	0445_MW361_221015	Normal	EM2220271	0.08	<0.01	**0.11**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
MW403	On-base	10/12/2017	0445E_BH01_S_171210	Normal	ES1731478	39.4	**3.38**	***96.2***	8.93	9.2	56.8	2.65	<0.02	2.2	4.94	14.7	1.87	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		12/11/2021	0445_MW403_211111	Normal	EM2122518	52.3	**4.41**	***93.9***	5.04	5.46	41.6	3.48	<0.04	1.1	2.23	9.86	1.69	0.05	<0.04	<0.04	<0.04	<0.04	<0.1	<0.04	<0.1	<0.0001	<0.1
		5/05/2022	0445_MW403_220505	Normal	EM2208381	52.7	**3.42**	***98.7***	5.98	7.17	46	4.26	<0.04	1.3	2.4	11.2	1.66	0.06	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09
		14/10/2022	0445_MW403_221014	Normal	EM2220286	58.1	**2.85**	***87.3***	4.15	3.95	29.2	2.9	<0.03	0.8	1.59	7.21	1.01	0.04	<0.03	<0.03	<0.03	<0.03	<0.08	<0.03	<0.08	<0.00008	<0.08
MW404	On-base	10/12/2017	0445E_BH02_S_171210	Normal	ES1731478	65.7	**6.8**	***118***	9.63	10	52.4	4.29	<0.02	1.9	5.15	12.3	3.38	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		11/11/2021	QC203_211111	Interlab_D	841785	47	**3.4**	***84***	4.7	4.6	37	1.7	<0.01	0.96	1.4	6.9	1.6	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05
			0445_QC103_211111	Field_D	EM2122518	40.9	**3.96**	***69.3***	5.33	2.88	28.4	2.75	<0.04	1.1	1.74	7.32	1.86	<0.04	<0.04	<0.04	<0.04	<0.04	<0.11	<0.04	<0.11	<0.00011	<0.11
			0445_MW404_211111	Normal	EM2122518	50.2	**3.86**	***81.1***	5.2	3.16	30.9	2.81	<0.04	0.8	1.66	7.59	1.73	<0.04	<0.04	<0.04	<0.04	<0.04	<0.1	<0.04	<0.1	<0.0001	<0.1
		5/05/2022	0445_MW404_220505	Normal	EM2208381	56.2	**4.02**	***101***	7.16	9.16	45.2	4.18	<0.04	1.2	2.63	13.3	2.8	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.09	<0.00009	<0.09
		14/10/2022	0445_MW404_221014	Normal	EM2220286	82.4	**6.44**	***156***	12.8	13	74	4.68	<0.03	1.6	4.15	19.6	4.22	0.04	<0.03	<0.03	<0.03	<0.03	<0.08	<0.03	<0.08	<0.00008	<0.08
OTH019	Off-base	31/10/2018	0445_QC220_181031	Interlab_D	625560	0.037	0.004	**0.157**	0.01	0.009	0.12	0.004	<0.001	<0.005	<0.001	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.005	<0.000005	<0.005
			0445_OTH019_181031	Normal	ES1832670	0.037	0.0053	**0.171**	0.0095	0.0102	0.134	0.0054	<0.0005	<0.002	<0.0005	0.0056	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
			0445_QC120_181031	Field_D	ES1832670	0.0375	0.0058	**0.178**	0.01	0.0105	0.141	0.0056	<0.0005	<0.002	<0.0005	0.0054	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001
		15/11/2021	0445_OTH019_211115	Normal	EM2122969	0.05	<0.01	**0.18**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		5/05/2022	0445_OTH019_220505	Normal	EM2208348	0.04	<0.01	**0.15**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
		10/11/2022	0445_OTH019_221110	Normal	EM2222364	0.03	<0.01	**0.13**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC110_221110	Field_D	EM2222364	0.03	<0.01	**0.13**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05
			0445_QC210_221110	Interlab_D	941104	0.05	<0.01	**0.15**	<0.01	<0.01	0.10	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05

Notes
Denotes first-time detection above LOR in latest monitoring round
Denotes new exceedance of lowest adopted screening criteria in latest monitoring round

						N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
EQL						0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water														
PFAS NEMP 2.0 Table 1 Health Recreational Water														
PFAS NEMP 2.0 Table 5 Freshwater 95%														
PFAS NEMP 2.0 Table 5 Freshwater 99%														
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**									
MW009	On-base	28/11/2017	0445E_MW09_S_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.2	-
		16/11/2021	0445_MW009_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.6	-
		5/05/2022	0445_MW009_220505	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	14.9	-
		13/10/2022	0445_MW009_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	12.6	-
MW012	On-base	28/11/2017	0445E_MW12_S_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.3	-
			0445E_QC100_171128	Field_D	ES1730397	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37	-
		12/11/2021	0445_MW012_211111	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.43	-
		5/05/2022	0445_MW012_220505	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.62	-
		13/10/2022	0445_MW012_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21	-
MW016	On-base	28/11/2017	0445E_MW16_S_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15	-
		16/11/2021	0445_MW016_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.77	-
		9/05/2022	0445_MW016_220509	Normal	EM2208649	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.8	-
		13/10/2022	0445_MW016_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	10	-
MW018	On-base	28/11/2017	0445E_MW18_S_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-
		16/11/2021	0445_MW018_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	-
		5/05/2022	0445_MW018_220505	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77	-
		13/10/2022	0445_MW018_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18	-
MW020	On-base	28/11/2017	0445E_MW20_S_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.91	-
		16/11/2021	0445_MW020_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.16	-
		3/05/2022	0445_MW020_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.42	-
		13/10/2022	0445_MW020_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.91	-
MW029	On-base	11/12/2017	0445E_MW29_S_171211	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.61	-
		11/11/2021	0445_MW029_211111	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.98	-
		5/05/2022	0445_MW029_220505	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.26	-
		13/10/2022	0445_MW029_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.26	-
MW034	On-base	28/11/2017	0445E_MW34_S_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.08	-
		16/11/2021	0445_MW034_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.67	-
		3/05/2022	0445_MW034_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.25	-
			0445_QC106_220503	Field_D	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.99	-
			0445_QC206_220505	Interlab_D	886780	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	4.09	0.00339
		13/10/2022	0445_MW034_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.38	-
MW035	On-base	28/11/2017	0445E_MW35_S_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	20.4	-
		16/11/2021	0445_MW035_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3	-
		3/05/2022	0445_MW035_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	18.7	-
		13/10/2022	0445_MW035_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	21.5	-
MW042	On-base	28/11/2017	0445E_MW42_D_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	25.3	-
		11/11/2021	QC204_211111	Interlab_D	841785	<0.05	<0.05	<0.05	<0.01	0.09	<0.01	<0.01	18.21	0.01195
			0445_MW042_211111	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	14.2	-
			0445_QC104_211111	Field_D	EM2122518	<0.09	<0.04	<0.04	<0.05	0.05	<0.05	<0.05	13.6	-
		3/05/2022	0445_MW042_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	23.1	-
		13/10/2022	0445_MW042_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	0.2	<0.05	<0.05	22.3	-
MW043	On-base	28/11/2017	0445E_MW43_I_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	0.46	<0.05	<0.05	48.1	-
		16/11/2021	0445_MW043_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	21.9	-
		3/05/2022	0445_MW043_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	0.24	<0.05	<0.05	24.7	-
		13/10/2022	0445_MW043_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	22.4	-
MW046_D	On-base	28/11/2017	0445E_MW46_D_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	6.08	-
		3/05/2022	0445_MW046D_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	6.7	-
		13/10/2022	0445_MW046_D_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.45	-
MW046_I	On-base	28/11/2017	0445E_MW47_I_171128	Normal	ES1730397	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	6.04	-
		4/05/2022	0445_MW046I_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.58	-
		13/10/2022	0445_MW046_I_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.66	-

	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
EQL	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water									
PFAS NEMP 2.0 Table 1 Health Recreational Water									
PFAS NEMP 2.0 Table 5 Freshwater 95%									
PFAS NEMP 2.0 Table 5 Freshwater 99%									

Location_Code	Location_Type	Sampled_Date_Time	Field_ID	Sample_Type	Lab_Report_Number								
MW051	On-base	4/12/2017	0445S_MW04_S_171204	Normal	ES1731167	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	-
		10/11/2021	QC200_211110	Interlab_D	841785	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.00001
			0445_MW051_211110	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
			0445_QC100_211110	Field_D	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		12/10/2022	0445_QC204_221012	Interlab_D	932350	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.00002
			0445_MW051_20221012	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-
			0445_QC104_20221012	Field_D	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-
MW052	On-base	1/06/2012	0445E_MW06-A_120601	Normal	ES1213811	-	-	-	-	<0.1	-	-	-	-
			0445E_QC103_120601	Field_D	ES1213811	-	-	-	-	<0.1	-	-	-	-
		7/03/2017	0445_MW06_070307	Normal	163195	-	-	-	-	<0.01	<0.01	-	-	-
		11/12/2017	0445E_MW06A_S_171211	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	41.4	-
		16/11/2021	0445_MW052_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.7	-
		5/05/2022	0445_MW052_220505	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	21.4	-
		14/10/2022	0445_MW052_221014	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	17.4	-
MW056	On-base	29/11/2017	0445S_BH111_P_171129	Normal	ES1730510	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.87	-
		11/11/2021	0445_MW056_211111	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.32	-
		12/10/2022	0445_QC205_221012	Interlab_D	932350	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.95	0.00151
		12/10/2022	0445_MW056_221012	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.48	-
		12/10/2022	0445_QC105_20221012	Field_D	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.7	-
MW304	On-base	6/12/2017	0445s_MW304_S_171206	Normal	ES1731108	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
		10/11/2021	0445_MW304_211110	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
		4/05/2022	0445_MW304_220504	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
			0445_QC107_220504	Field_D	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-
			0445_QC207_220504	Interlab_D	886780	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.16	0.00016
		10/10/2022	0445_MW304_20221010	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	0.94	-
MW307	On-base	6/12/2017	0445s_MW307_S_171206	Normal	ES1731108	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	-
			0445s_QC110_171206	Field_D	ES1731108	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41	-
		11/11/2021	0445_MW307_211110	Normal	EM2122518	<0.09	<0.04	<0.04	0.9	65.4	<0.05	<0.05	928	-
		22/12/2021	0445_MW307_211222	Normal	EM2125903	<0.14	<0.05	<0.05	0.9	100	<0.05	<0.05	1270	-
			0445_QC101_211222	Field_D	EM2125903	<0.13	<0.05	<0.05	0.91	102	<0.05	<0.05	1240	-
			0445_QC201_211222	Interlab_D	852797	<0.05	<0.05	<0.05	0.33	26	<0.01	<0.01	774.38	0.4649
		4/05/2022	0445_MW307_220504	Normal	EM2208381	<0.09	<0.04	<0.04	1.1	116	<0.05	<0.05	1440	-
		10/10/2022	0445_MW307_221010	Normal	EM2220286	<0.05	<0.02	<0.02	0.11	11.6	<0.05	<0.05	145	-
MW311	On-base	5/12/2017	0445S_MW311_S_171205	Normal	ES1731167	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	-
			0445S_QC108_171205	Field_D	ES1731167	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	-
		17/11/2021	0445_MW311_211117	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		10/10/2022	0445_MW311_221010	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW312	On-base	6/12/2017	0445s_MW312_S_171206	Normal	ES1731108	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-
		10/11/2021	0445_MW312_21110	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-
		4/05/2022	0445_MW312_220504	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
		10/10/2022	0445_MW312_221010	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
MW313	Off-base	9/12/2017	0445_MW313_D_171209	Normal	ES1731468	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0052	-
		11/11/2021	0445_MW313_211111	Normal	EM2122519	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		15/10/2022	0445_MW313_221015	Normal	EM2220271	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW315	On-base	6/12/2017	0445s_MW315_D_171206	Normal	ES1731108	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		17/11/2021	0445_MW315_211117	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW317	On-base	6/12/2017	0445s_MW317_D_171206	Normal	ES1731108	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-

	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
EQL	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water									
PFAS NEMP 2.0 Table 1 Health Recreational Water									
PFAS NEMP 2.0 Table 5 Freshwater 95%									
PFAS NEMP 2.0 Table 5 Freshwater 99%									

Location_Code	Location_Type	Sampled_Date_Time	Field_ID	Sample_Type	Lab_Report_Number								
MW319	On-base	4/12/2017	0445S_MW319_D_171204	Normal	ES1731167	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38	-
		10/11/2021	QC201_211110	Interlab_D	841785	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.55	0.00051
			0445_MW319_211110	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37	-
			0445_QC101_211110	Field_D	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.39	-
		12/10/2022	0445_QC203_221012	Interlab_D	932350	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.28	0.00028
			0445_MW319_221012	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	-
			0445_QC103_20221012	Field_D	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	-
MW321	On-base	5/12/2017	0445S_MW321_S_171205	Normal	ES1731167	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.45	-
		10/11/2021	0445_MW321_211110	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.96	-
		12/10/2022	0445_QC202_221012	Interlab_D	932350	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.00009
			0445_MW321_221210	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	-
			0445_QC102_20221012	Field_D	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.73	-
MW323	On-base	30/11/2017	0445S_MW323_S_171130	Normal	ES1730642	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
			0445S_QC104_S_171130	Field_D	ES1730642	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
			0445S_QC204_171130	Interlab_D	575864	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	-
		10/11/2021	0445_MW323_211110	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		12/10/2022	0445_MW323_221210	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW325		4/12/2017	0445S_MW325_S_171204	Normal	ES1731167	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		14/10/2022	0445_MW325_221014	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW326	On-base	4/12/2017	0445S_MW326_S_171204	Normal	ES1731167	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-
		10/11/2021	0445_MW326_211110	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.01	-
MW328		4/12/2017	0445S_MW328_D_171204	Normal	ES1731167	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
		14/10/2022	0445_MW328_221014	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18	-
			0445_MW328_221014_DUP	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
MW329	On-base	4/12/2017	0445S_MW329_S_171204	Normal	ES1731167	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
		10/11/2021	QC202_211110	Interlab_D	841785	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.28	0.00019
		10/11/2021	0445_MW329_21110	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
		10/11/2021	0445_QC102_211110	Field_D	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
		12/10/2022	0445_MW329_221012	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	0.73	-
MW342	On-base	7/12/2017	0445N_MW342_S_171207	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.2	-
		11/11/2021	0445_MW342_211111	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.8	-
		22/12/2021	0445_MW342_211222	Normal	EM2125903	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13	-
			0445_QC100_211222	Field_D	EM2125903	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.2	-
			0445_QC200_211222	Interlab_D	852797	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	17.88	0.01292
		6/05/2022	0445_MW342_220506	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.3	-
			0445_QC111_220506	Field_D	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.3	-
			0445_QC211_220506	Interlab_D	886780	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	15.27	0.01151
		15/10/2022	0445_MW342_221015	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.77	-
MW345	On-base	7/12/2017	0445N_MW345_S_171207	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-
		17/11/2021	0445_MW345_211117	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-
		6/05/2022	0445_MW345_220506	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	-
		12/10/2022	0445_MW345_221014	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41	-
MW346	On-base	7/12/2017	0445N_QC212_171207	Normal	577514	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	-
		7/12/2017	0445N_MW346_S_171207	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		11/12/2017	0445N_QC112_171207	Field_D	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		16/11/2021	0445_MW346_211117	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		6/05/2022	0445_MW346_220506	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		12/10/2022	0445_MW346_221012	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-

						N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
EQL						0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water														
PFAS NEMP 2.0 Table 1 Health Recreational Water														
PFAS NEMP 2.0 Table 5 Freshwater 95%														
PFAS NEMP 2.0 Table 5 Freshwater 99%														
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**									
MW350_D	On-base	10/12/2017	0445E_MW350_D_171210	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.79	-
		11/11/2021	0445_MW350_D_211111	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77	-
		3/05/2022	0445_MW350_D_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.75	-
		14/10/2022	0445_MW350_D_221014	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.86	-
MW350_S	On-base	10/12/2017	0445E_MW350_S_171210	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	0.42	<0.05	<0.05	137	-
		11/11/2021	QC205_211111	Interlab_D	841785	<0.05	<0.05	<0.05	<0.01	0.43	<0.01	<0.01	95.78	0.0718
		11/11/2021	0445_MW350_S_211111	Normal	EM2122518	<0.09	<0.04	<0.04	<0.05	0.37	<0.05	<0.05	70.1	-
		11/11/2021	0445_QC105_211111	Field_D	EM2122518	<0.09	<0.04	<0.04	<0.05	0.29	<0.05	<0.05	71	-
		6/05/2022	0445_MW350_S_220506	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	1.22	<0.05	<0.05	63	-
		14/10/2022	0445_MW350_S_221014	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	0.8	<0.05	<0.05	50.5	-
MW351	On-base	11/12/2017	0445E_MW351_S_171211	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
		16/11/2021	0445_MW351_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
		3/05/2022	0445_MW351_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
			0445_QC100_220503	Field_D	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
			0445_QC200_220503	Interlab_D	886780	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.00002
		13/10/2022	0445_MW351_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-
MW352	On-base	11/12/2017	0445E_MW352_S_171211	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1	-
		16/11/2021	0445_MW352_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-
		3/05/2022	0445_MW352_220503	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-
		13/10/2022	0445_MW352_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW353	On-base	11/12/2017	0445E_MW353_S_171211	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3	-
		12/11/2021	0445_MW353_211111	Normal	EM2122518	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.19	-
		5/05/2022	0445_MW353_220505	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.69	-
		13/10/2022	0445_MW353_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.35	-
MW354	On-base	11/12/2017	0445E_MW354_S_171211	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-
			0445E_QC116_171211	Field_D	ES1731478	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38	-
		16/11/2021	0445_MW354_211116	Normal	EM2122998	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.5	-
		5/05/2022	0445_MW354_220505	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
		13/10/2022	0445_MW354_221013	Normal	EM2220286	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
MW356	Off-base	9/12/2017	0445_MW356_S_171209	Normal	ES1731468	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0019	-
		12/11/2021	0445_MW356_211112	Normal	EM2122519	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-
		7/05/2022	0445_MW356_220505	Normal	EM2208383	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-
MW357	Off-base	9/12/2017	0445_MW357_S_171209	Normal	ES1731468	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.136	-
			0445_QC114_171209	Field_D	ES1731468	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.127	-
		12/11/2021	0445_MW357_211112	Normal	EM2122519	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-
		6/05/2022	0445_MW357_220506	Normal	EM2208383	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-
		12/10/2022	0445_MW357_221012	Normal	EM2220271	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	-

						N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
EQL						0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water														
PFAS NEMP 2.0 Table 1 Health Recreational Water														
PFAS NEMP 2.0 Table 5 Freshwater 95%														
PFAS NEMP 2.0 Table 5 Freshwater 99%														
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**									
MW360	Off-base	9/12/2017	0445_MW360_S_171209	Normal	ES1731468	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.263	-
		11/11/2021	0445_MW360_211111	Normal	EM2122519	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
		6/05/2022	0445_MW360_220506	Normal	EM2208383	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	-
		15/10/2022	0445_MW360_221015	Normal	EM2220271	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-
MW361	Off-base	9/12/2017	0445_MW361_S_171209	Normal	ES1731468	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.386	-
			0445_QC115_171209	Field_D	ES1731468	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.36	-
		11/11/2021	0445_MW361_211111	Normal	EM2122519	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-
		7/05/2022	0445_MW361_220506	Normal	EM2208381	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-
		15/10/2022	0445_MW361_221015	Normal	EM2220271	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	-
MW403	On-base	10/12/2017	0445E_BH01_S_171210	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	1.01	0.05	<0.05	145	-
		12/11/2021	0445_MW403_211111	Normal	EM2122518	<0.1	<0.04	<0.04	<0.05	1.41	<0.05	<0.05	129	-
		5/05/2022	0445_MW403_220505	Normal	EM2208381	<0.09	<0.04	<0.04	<0.05	0.95	<0.05	<0.05	137	-
		14/10/2022	0445_MW403_221014	Normal	EM2220286	<0.08	<0.03	<0.03	<0.05	0.5	0.05	<0.05	112	-
MW404	On-base	10/12/2017	0445E_BH02_S_171210	Normal	ES1731478	<0.05	<0.02	<0.02	<0.05	0.12	<0.05	<0.05	172	-
		11/11/2021	QC203_211111	Interlab_D	841785	<0.05	<0.05	<0.05	<0.01	0.08	<0.01	<0.01	110.86	0.0874
			0445_QC103_211111	Field_D	EM2122518	<0.11	<0.04	<0.04	<0.05	0.06	<0.05	<0.05	96.3	-
			0445_MW404_211111	Normal	EM2122518	<0.1	<0.04	<0.04	<0.05	0.06	<0.05	<0.05	108	-
		5/05/2022	0445_MW404_220505	Normal	EM2208381	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	146	-
		14/10/2022	0445_MW404_221014	Normal	EM2220286	<0.08	<0.03	<0.03	<0.05	0.07	<0.05	<0.05	223	-
OTH019	Off-base	31/10/2018	0445_QC220_181031	Interlab_D	625560	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.194	0.000161
			0445_OTH019_181031	Normal	ES1832670	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.208	-
			0445_QC120_181031	Field_D	ES1832670	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.217	-
		15/11/2021	0445_OTH019_211115	Normal	EM2122969	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18	-
		5/05/2022	0445_OTH019_220505	Normal	EM2208348	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-
		10/11/2022	0445_OTH019_221110	Normal	EM2222364	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-
			0445_QC110_221110	Field_D	EM2222364	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-
			0445_QC210_221110	Interlab_D	941104	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.15	-

Notes

Denotes first-time detection above LOR in latest monitoring round

Denotes new exceedance of lowest adopted screening criteria in latest monitoring round

Table B2: Surface Water Analytical Results

						Perfluorocarbons																								
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																						
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																						
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																							
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																							
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																									
SW307	On-base	17/11/2021	0445_SW307_211117	Normal	EM2122998	0.07	<0.01	**0.17**	<0.02	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW307_221013	Normal	EM2220286	0.14	<0.01	**0.25**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW310	On-base	17/11/2021	0445_SW310_211117	Normal	EM2122998	0.11	<0.01	**0.32**	<0.02	<0.02	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/10/2022	0445_SW310_221010	Normal	EM2220286	0.18	<0.01	**0.46**	0.04	0.03	0.28	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW311	On-base	17/11/2021	0445_SW311_211117	Normal	EM2122998	1.75	0.03	***2.16***	0.03	0.02	0.41	0.03	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/10/2022	0445_QC200_221010	Interlab_D	932350	1.2	0.1	***2.4***	0.07	0.06	1.2	0.04	<0.01	0.23	0.34	0.36	0.06	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW311_221010	Normal	EM2220286	0.74	0.07	**1.56**	0.04	0.04	0.82	0.03	<0.02	<0.1	0.22	0.26	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC100_20221010	Field_D	EM2220286	0.97	0.07	**1.89**	0.05	0.04	0.92	0.03	<0.02	0.2	0.24	0.29	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW313	On-base	17/11/2021	0445_QC111_211117	Field_D	EM2122998	3.85	0.3	***5.13***	0.1	0.07	1.28	0.06	<0.02	0.1	0.33	0.48	0.11	0.19	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC211_211117	Interlab_D	842787	4.5	0.35	***6.1***	0.08	0.08	1.6	0.08	<0.01	0.23	0.32	0.53	0.12	0.18	0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW313_211117	Normal	EM2122998	3.13	0.3	***4.43***	0.1	0.06	1.3	0.07	<0.02	0.1	0.31	0.44	0.11	0.18	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/10/2022	0445_SW313_221010	Normal	EM2220286	2.91	0.1	***3.97***	0.1	0.08	1.06	0.04	<0.02	0.1	0.37	0.44	0.05	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW316	On-base	17/10/2017	0445S_SW316_0.1_171017	Normal	ES1726190	0.722	0.014	**1.11**	0.0242	0.0306	0.388	0.0232	0.002	<0.002	0.008	0.0418	0.0062	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		17/11/2021	0445_SW316_211117	Normal	EM2122998	0.52	0.02	**1.02**	0.04	0.03	0.5	0.02	<0.02	<0.1	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		16/05/2022	0445S_SW316_220516	Normal	EM2209833	0.14	<0.01	**0.23**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/10/2022	0445_SW316_221010	Normal	EM2220286	0.91	0.03	**1.37**	0.03	0.02	0.46	0.03	<0.02	<0.1	0.04	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW321	On-base	17/11/2021	0445_QC112_211117	Field_D	EM2122998	3.88	0.08	***6.24***	0.18	0.17	2.36	0.1	<0.02	<0.1	0.05	0.36	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC212_211117	Interlab_D	842787	7.5	0.11	***10.3***	0.18	0.26	2.8	0.13	<0.01	0.06	0.06	0.45	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW321_211117	Normal	EM2122998	3.48	0.09	***5.8***	0.16	0.16	2.32	0.1	<0.02	<0.1	0.06	0.35	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW321_220504	Normal	EM2208381	6.13	0.05	***7.09***	0.05	0.05	0.96	0.1	<0.02	<0.1	0.02	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/10/2022	0445_SW321_221010	Normal	EM2220286	0.96	<0.01	**1.12**	<0.02	<0.02	0.16	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW322	On-base	17/11/2021	0445_SW322_211117	Normal	EM2122998	2.38	0.07	***4.48***	0.16	0.16	2.1	0.08	<0.02	<0.1	0.05	0.31	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW322_220504	Normal	EM2208381	6.97	0.06	***8.01***	0.04	0.06	1.04	0.11	<0.02	<0.1	0.02	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/10/2022	0445_SW322_221010	Normal	EM2220286	0.83	<0.01	**1**	<0.02	<0.02	0.17	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW323	On-base	17/10/2017	0445S_SW323_0.2_171017	Normal	ES1726190	1.13	0.0304	**1.42**	0.0212	0.0278	0.287	0.0212	0.0044	<0.002	0.024	0.0652	0.021	0.0094	0.0032	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		17/11/2021	0445_SW323_211117	Normal	EM2122998	0.66	0.03	**0.94**	0.02	<0.02	0.28	<0.02	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW323_220504	Normal	EM2208381	0.65	0.02	**0.85**	0.03	<0.02	0.2	<0.02	<0.02	<0.1	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/10/2022	0445_SW323_221010	Normal	EM2220286	0.56	0.03	**0.79**	0.04	<0.02	0.23	<0.02	<0.02	<0.1	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW324	On-base	20/10/2017	0445S_SW324_0.1_171020	Normal	ES1726682	1.53	0.155	***2.03***	0.0759	0.13	0.496	0.0823	<0.0005	<0.002	0.114	0.139	0.0654	0.0372	0.0075	0.0022	<0.0005	<0.0005	<0.0005	0.0039	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		17/11/2021	0445_QC110_211117	Field_D	EM2122998	1.61	0.08	***2.23***	0.06	0.04	0.62	0.03	<0.02	<0.1	0.1	0.15	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC210_211117	Interlab_D	842787	2.6	0.11	***3.6***	0.05	0.06	1	0.05	0.01	0.1	0.11	0.21	0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW324_211117	Normal	EM2122998	1.86	0.1	***2.61***	0.06	0.05	0.75	0.04	<0.02	<0.1	0.1	0.17	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW324_220504	Normal	EM2208381	0.96	0.03	**1.2**	<0.02	<0.02	0.24	<0.02	<0.02	<0.1	0.04	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/10/2022	0445_SW324_221010	Normal	EM2220286	1.46	0.06	**1.96**	0.04	0.03	0.5	0.04	<0.02	<0.1	0.06	0.11	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW326	On-base	17/11/2021	0445_SW326_211117	Normal	EM2122998	7.99	0.38	***10.1***	0.22	0.19	2.14	0.22	0.07	0.2	0.37	0.63	0.19	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW326_220504	Normal	EM2208381	0.6	0.01	**0.69**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW326_221014	Normal	EM2220286	0.48	0.02	**0.65**	<0.02	<0.02	0.17	<0.02	<0.02	<0.1	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW332	On-base	17/10/2017	0445S_SW332_0.05_171017	Normal	ES1726190	3.98	0.0496	***4.45***	0.149	0.0898	0.472	0.0436	0.0244	0.032	0.161	0.419	0.0302	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	0.0164	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		17/11/2021	0445_SW332_211117	Normal	EM2122998	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW332_221014	Normal	EM2220286	0.04	<0.01	**0.1**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW333	On-base	17/10/2017	0445S_SW333_0.05_171017	Normal	ES1726190	0.444	0.0136	**0.577**	0.0148	0.0162	0.133	0.009	<0.002	<0.002	0.0042	0.036	0.006	0.0028	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		17/11/2021	0445_SW333_211117	Normal	EM2122998	0.44	0.03	**0.84**	0.07	0.05	0.4	<0.02	<0.02	<0.1	0.07	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW333_220504	Normal	EM2208381	0.11	<0.01	**0.13**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW333_221014	Normal	EM2220286	0.41	0.01	**0.58**	0.03	<0.02	0.17	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW336	On-base	18/10/2017	0445S_QC267_171018	Interlab_D	569078	48	**1.2**	***50.7***	0.22	0.34	2.7	0.4	0.009	0.32	0.75	2.8	0.44	0.47	0.34	0.058	0.011	<0.001	<0.001	0.042	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005
			0445S_QC167_171018	Field_D	ES1726433	17.6	**0.85**	***19.8***	0.172	0.288	2.18	0.298	0.0452	0.044	0.352	1.93	0.324	0.347	0.137	0.0148	<0.002	<0.002	<0.005	0.0132	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
			0445S_SW336_0.1_171018	Normal	ES1726433	17.2	**0.899**	***19.6***	0.178	0.306	2.45	0.31	0.0396	0.055	0.446	2.3	0.382	0.348	0.136	0.0128	<0.002	<0.002	<0.005	0.0126	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		15/11/2021	0445_SW336_211115	Normal	EM2122998	7.29	0.2	***7.71***	0.06	0.05	0.42	0.05	0.19	<0.1	0.1	0.26	0.1	0.15	0.16	0.1	0.02	<0.02	<0.05	0.03	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW336_220504	Normal	EM2208381	7.64	0.35	***8.18***	0.14	0.11	0.54	0.04	0.96	<0.2	0.44	0.95	0.25	0.16	0.14	0.23	0.24	0.08	<0.09	0.11	<0.09	<0.00009	<0.09	<0.09	<0.04	<0.04

						Perfluorocarbons																							
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																						
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																						
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																							
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																							
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																									
		14/10/2022	0445_QC206_221014	Interlab_D	932350	6.8	0.25	***7.6***	0.07	0.07	0.8	0.15	0.08	0.06	0.14	0.3	0.11	0.07	0.09	0.03	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW336_221014	Normal	EM2220286	5.98	0.19	***6.63***	0.05	0.07	0.65	0.1	0.09	<0.1	0.1	0.23	0.08	0.06	0.08	0.04	<0.02	<0.02	<0.05	0.05	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC106_20221014	Field_D	EM2220286	4.7	0.17	***5.21***	0.05	0.05	0.51	0.08	0.07	<0.1	0.09	0.21	0.08	0.06	0.07	0.03	<0.02	<0.02	<0.05	0.04	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW338	On-base	18/10/2017	0445S_SW338_0.2_171018	Normal	ES1726433	3.94	0.224	***5.28***	0.202	0.21	1.34	0.111	0.0042	0.024	0.179	0.806	0.0998	0.0276	0.0048	<0.002	<0.002	<0.002	<0.005	0.0046	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		10/11/2021	0445_SW338_211109	Normal	EM2122518	1.06	0.05	**1.31**	0.09	0.03	0.25	<0.02	<0.02	<0.1	0.04	0.16	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW338_220504	Normal	EM2208381	0.76	0.04	**1**	0.03	0.03	0.24	<0.02	<0.02	<0.1	0.04	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_QC207_221014	Interlab_D	932350	0.81	0.04	**1.03**	0.03	0.03	0.22	0.01	<0.01	<0.05	0.04	0.12	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW338_221014	Normal	EM2220286	0.53	0.03	**0.7**	0.03	0.02	0.17	<0.02	<0.02	<0.1	0.03	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC107_20221014	Field_D	EM2220286	0.62	0.03	**0.79**	0.03	0.02	0.17	<0.02	<0.02	<0.1	0.02	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW340	On-base	18/10/2017	0445S_SW340_0.03_171018	Normal	ES1726433	5.59	0.333	***6.8***	0.134	0.158	1.21	0.096	0.0332	0.039	0.258	0.488	0.236	0.0956	0.0496	0.0144	0.0024	<0.002	<0.005	0.011	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		10/11/2021	0445_SW340_211109	Normal	EM2122518	4.2	0.15	***5.86***	0.26	0.21	1.66	0.11	<0.02	0.2	0.28	0.44	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_QC208_221014	Interlab_D	932350	1.3	0.06	**1.59**	0.03	0.03	0.29	0.02	<0.01	<0.05	0.05	0.09	0.04	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW340_221014	Normal	EM2220286	0.76	0.05	**0.98**	0.02	0.02	0.22	<0.02	<0.02	<0.1	0.03	0.07	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC108_20221014	Field_D	EM2220286	0.7	0.05	**0.91**	0.02	0.02	0.21	<0.02	<0.02	<0.1	0.03	0.06	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW346	On-base	12/10/2017	0445S_SW346_0.2_171013	Normal	ES1725991	1.42	0.0634	**1.95**	0.0841	0.0844	0.526	0.0294	<0.0005	<0.002	0.11	0.15	0.0496	0.0206	0.0068	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		17/11/2021	0445_SW346_211117	Normal	EM2122998	0.73	0.04	**0.94**	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.07	0.08	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW346_220504	Normal	EM2208381	0.69	0.04	**0.86**	0.04	<0.02	0.17	<0.02	<0.02	<0.1	0.04	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW346_221014	Normal	EM2220286	0.77	0.04	**1.07**	0.05	0.04	0.3	0.02	<0.02	<0.1	0.05	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW349	On-base	13/10/2017	0445S_QC159_171012	Field_D	ES1725991	0.854	0.0616	**1.33**	0.112	0.0908	0.479	0.0227	<0.0005	<0.002	0.124	0.166	0.0475	0.0164	0.0033	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445S_SW349_0.5_171013	Normal	ES1725991	0.95	0.0476	**1.51**	0.104	0.0845	0.56	0.0216	<0.0005	<0.002	0.112	0.15	0.0399	0.012	0.0026	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		15/11/2021	0445_QC206_211115	Interlab_D	842787	0.84	0.05	**1.06**	0.04	0.03	0.22	0.01	<0.01	0.08	0.07	0.1	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_QC106_211115	Field_D	EM2122998	0.55	0.04	**0.73**	0.05	0.02	0.18	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_SW349_211115	Normal	EM2122998	0.61	0.04	**0.82**	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW349_220504	Normal	EM2208381	0.48	0.02	**0.61**	0.03	<0.02	0.13	<0.02	<0.02	<0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW349_221014	Normal	EM2220286	0.47	0.03	**0.63**	0.03	0.02	0.16	<0.02	<0.02	<0.1	0.04	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW355	On-base	13/10/2017	0445S_SW355_0.5_171013	Normal	ES1725991	0.325	0.0133	**0.533**	0.143	0.0294	0.208	0.0065	<0.0005	<0.002	0.0279	0.042	0.0111	0.0039	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		17/11/2021	0445_QC107_211117	Field_D	EM2122998	0.21	0.02	**0.29**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC207_211117	Interlab_D	842787	0.29	0.02	**0.39**	0.02	0.01	0.1	<0.01	<0.01	<0.05	0.03	0.04	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW355_211117	Normal	EM2122998	0.22	0.01	**0.3**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_QC204_220504	Interlab_D	886780	0.27	<0.01	**0.32**	0.01	<0.01	0.05	<0.01	<0.01	<0.05	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW355_220504	Normal	EM2208381	0.11	<0.01	**0.13**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC104_220504	Field_D	EM2208381	0.19	0.01	**0.24**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW355_221014	Normal	EM2220286	0.21	<0.01	**0.28**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW370	On-base	23/10/2017	0445N_SW370_0.01_171023	Normal	ES1726698	0.166	0.0213	**0.326**	0.0255	0.0591	0.16	0.0121	<0.0005	0.018	0.0284	0.0307	0.0176	0.0069	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		17/11/2021	0445_SW370_211117	Normal	EM2122998	0.22	0.01	**0.3**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW370_220506	Normal	EM2208381	0.1	<0.01	**0.13**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		15/10/2022	0445_QC209_221015	Interlab_D	932350	0.19	<0.01	**0.27**	<0.01	<0.01	0.08	<0.01	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_QC109_20221015	Field_D	EM2220286	0.14	<0.01	**0.2**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_SW370_221015	Normal	EM2220286	0.14	<0.01	**0.2**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW374	On-base	23/10/2017	0445N_SW374_0.1_171023	Normal	ES1726698	0.201	0.0228	**0.34**	0.0293	0.0378	0.139	0.0108	<0.0005	<0.002	0.0294	0.0324	0.0156	0.0057	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		17/11/2021	0445_SW374_211117	Normal	EM2122998	0.13	<0.01	**0.17**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW374_220506	Normal	EM2208381	0.05	<0.01	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		15/10/2022	0445_SW374_221014	Normal	EM2220286	0.08	<0.01	**0.12**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW375	On-base	23/10/2017	0445N_QC228_171023	Interlab_D	569535	0.19	0.015	**0.29**	0.021	0.013	0.1	0.003	<0.001	0.019	0.035	0.039	0.012	0.003	0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005
			0445N_QC128_171023	Field_D	ES1726698	0.166	0.019	**0.294**	0.0274	0.0267	0.128	0.0089	<0.0005	0.019	0.0232	0.0267	0.0156	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445N_SW375_0.1_171023	Normal	ES1726698	0.15	0.0197	**0.27**	0.0227	0.0245	0.12	0.0092	<0.0005	0.015	0.0253	0.0317	0.0162	0.0046	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		1/08/2018	0445_QC205_180801	Interlab_D	611290	0.07	0.006	**0.101**	0.004	0.003	0.031	0.002	<0.001	0.006	0.005	0.012	0.005	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005
			0445_QC105_180801	Field_D	ES1823003	0.0623	0.0075	**0.104**	0.0068	0.0038	0.0415	0.0019	<0.0005	<0.002	<0.0005	0.0089	0.0053	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445_SW375_0.2_180801	Normal	ES1823003	0.0644	0.0074	**0.106**	0.0046	0.0029	0.0419	0.0016	<0.0005	<0.002	0.0025	0.0101	0.0076	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005

Table B2: Surface Water Analytical Results

						Perfluorocarbons																									
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																							
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																							
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																								
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																								
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																										
		17/11/2021	0445_SW375_211117	Normal	EM2122998	0.09	<0.01	**0.15**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW375_220506	Normal	EM2208381	0.06	<0.01	**0.08**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW375_221012	Normal	EM2220286	0.05	<0.01	**0.08**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW379	On-base	16/11/2021	0445_SW379_21116	Normal	EM2122998	0.41	0.02	**0.58**	0.15	0.04	0.17	<0.02	0.02	0.1	0.07	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW379_221014	Normal	EM2220286	0.12	<0.01	**0.15**	0.03	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW380	On-base	10/11/2021	0445_SW380_211108	Normal	EM2122518	0.34	<0.01	**0.43**	0.06	0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW380_221014	Normal	EM2220286	0.18	<0.01	**0.2**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW382	On-base	24/10/2017	0445E_QC131_171024	Field_D	ES1726816	0.101	0.0039	**0.12**	0.0066	0.0043	0.0187	0.0026	<0.0005	<0.002	0.0064	0.0155	0.0028	0.0008	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445E_SW382_0.1_171024	Normal	ES1726816	0.107	0.0042	**0.13**	0.0074	0.0046	0.0225	0.0026	<0.0005	<0.002	0.0061	0.0157	0.0028	0.0008	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_QC109_211116	Field_D	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC209_211116	Interlab_D	842787	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW382_211116	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW382_220503	Normal	EM2208381	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		13/10/2022	0445_SW382_221013	Normal	EM2220286	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW387	On-base	25/10/2017	0445E_SW387_0.2_171025	Normal	ES1726955	0.053	0.0038	**0.157**	0.0273	0.0157	0.104	0.0045	<0.0005	<0.002	0.003	0.0074	0.0021	0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW387_211116	Normal	EM2122998	0.06	<0.01	**0.21**	0.03	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_QC101_220503	Field_D	EM2208381	0.04	<0.01	**0.12**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC201_220503	Interlab_D	886780	0.04	<0.01	**0.1**	0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW387_220503	Normal	EM2208381	0.05	<0.01	**0.1**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW387_221012	Normal	EM2220286	0.13	<0.01	**0.26**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW388	On-base	25/10/2017	0445E_SW388_0.2_171025	Normal	ES1726955	0.175	0.0046	**0.343**	0.0326	0.02	0.168	0.0054	<0.002	<0.002	<0.002	0.0102	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		16/11/2021	0445_SW388_211116	Normal	EM2122998	0.28	<0.01	**0.48**	0.04	<0.02	0.2	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		16/05/2022	0445S_SW388_220516	Normal	EM2209833	0.25	0.02	**0.84**	0.1	0.07	0.59	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW388_221210	Normal	EM2220286	0.07	<0.01	**0.12**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW390	Off-base	13/10/2017	0445_SW390_0.5_171013	Normal	ES1725997	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		31/07/2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		26/11/2018	0445_SW390_0.5_181126	Normal	ES1835585	0.0005	<0.0005	0.001	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		9/11/2021	0445_SW390_211109	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		5/05/2022	0445_SW390_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_SW390_221011	Normal	EM2220271	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW393	Off-base	16/10/2017	0445_SW393_0.1_171016	Normal	ES1726004	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		1/08/2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		26/11/2018	0445_SW393_0.2_181127	Normal	ES1835585	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW393_211116	Normal	EM2122999	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW393_220506	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/11/2022	0445_SW393_221110	Normal	EM2222367	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW395	Off-base	9/10/2017	0445_QC253_171010	Interlab_D	567888	0.094	0.004	**0.214**	0.018	0.02	0.12	0.003	<0.001	0.005	0.002	0.006	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005
			0445_QC153_171009	Field_D	ES1725705	0.0737	0.0022	**0.196**	0.0274	0.0154	0.122	0.0025	<0.0005	<0.002	<0.0005	0.0067	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445_SW395_0.5_171010	Normal	ES1725705	0.0925	0.0022	**0.224**	0.0296	0.0164	0.132	0.0034	<0.0005	<0.002	<0.0005	0.0088	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		3/11/2019	0445_SW395_0.5_191103	Normal	ES1936497	0.0688	0.0036	**0.126**	0.0092	0.0072	0.057	0.0038	<0.002	<0.002	<0.002	0.0052	0.0022	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		16/11/2021	0445_SW395_211116	Normal	EM2122999	0.09	<0.01	**0.19**	0.03	<0.02	0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		9/05/2022	0445_SW395_220509	Normal	EM2208629	0.04	<0.01	**0.1**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		10/11/2022	0445_SW395_221110	Normal	EM2222367	0.18	<0.01	**0.38**	0.03	0.02	0.2	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW396	Off-base	10/10/2017	0445_SW396_0.5_171010	Normal	ES1725715	0.434	0.025	**1.91**	0.214	0.16	1.48	0.0256	<0.0005	<0.002	<0.0005	0.189	0.0182	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		2/08/2018	0445_SW396_0.5_180802	Normal	ES1823005	0.596	0.0914	***2.24***	0.394	0.316	1.64	0.0643	<0.0005	<0.002	0.113	0.281	0.0901	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		3/11/2019	0445_SW396_0.5_191103	Normal	ES1936497	0.549	0.0356	**1.66**	0.153	0.157	1.11	0.0488	<0.002	<0.002	<0.002	0.129	0.0182	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		16/11/2021	0445_SW396_211116	Normal	EM2122968	0.44	0.04	**1.51**	0.16	0.11	1.07	0.03	<0.02	<0.1	0.04	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW396_220503	Normal	EM2208382	0.57	0.05	***2.22***	0.21	0.19	1.65	0.05	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW396_221012	Normal	EM2220270	0.42	0.02	**1.1**	0.09	0.08	0.68	0.02	<0.02	<0.1	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02

Table B2: Surface Water Analytical Results

						Perfluorocarbons																								
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																						
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																						
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																							
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																							
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																									
SW397	Off-base	10/10/2017	0445_SW397_0.5_171010	Normal	ES1725715	5.74	0.434	***12.8***	1.21	1.06	7.02	0.39	<0.0005	0.025	0.225	1.88	0.224	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445_SW397_1.0_171010	Normal	ES1725715	5.38	0.433	***12.3***	1.17	1.06	6.96	0.382	<0.0005	0.018	0.231	1.76	0.239	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445_SW397_1.3_171010	Normal	ES1725715	5.61	0.462	***12.7***	1.17	1.09	7.12	0.371	<0.0005	0.024	0.217	1.85	0.211	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		2/08/2018	0445_SW397_0.5_180802	Normal	ES1823005	2.86	0.361	***7.52***	0.608	0.821	4.66	0.307	<0.0005	0.054	0.191	0.932	0.157	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		26/11/2018	0445_QC225_181126	Interlab_D	630629	5.8	0.47	***11***	0.87	1.3	5.6	0.37	<0.001	0.21	0.33	1.3	0.3	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	<0.005	<0.005
			0445_QC125_181126	Field_D	ES1835587	3.22	0.336	***7.36***	0.696	0.544	4.14	0.263	<0.0005	0.051	0.222	1.05	0.191	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445_SW397_0.5_181126	Normal	ES1835587	3.84	0.362	***8.9***	0.773	0.711	5.06	0.282	<0.0005	0.051	0.236	1.14	0.206	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		3/11/2019	0445_QC135_191103	Field_D	ES1936497	4.43	0.383	***9.5***	0.801	1.05	5.07	0.394	<0.002	0.077	0.289	1.19	0.215	0.0028	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
			0445_SW397_0.5_191103	Normal	ES1936497	4.27	0.348	***9.44***	0.738	0.98	5.17	0.364	<0.002	0.079	0.259	1.08	0.191	0.0028	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		16/11/2021	0445_SW397_211116	Normal	EM2122968	3.32	0.3	***6.64***	0.57	0.51	3.32	0.26	<0.02	0.2	0.23	0.72	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW397_220503	Normal	EM2208382	3.99	0.34	***8.31***	0.64	0.68	4.32	0.3	<0.02	0.1	0.27	0.87	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW397_221012	Normal	EM2220270	3.23	0.24	***6.53***	0.5	0.51	3.3	0.24	<0.02	<0.1	0.18	0.75	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW398	Off-base	12/10/2017	0445_SW398_0.5_171012	Normal	ES1725997	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		1/08/2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		26/11/2018	0445_SW398_0.5_181126	Normal	ES1835585	0.0004	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW398_211116	Normal	EM2122999	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW398_220503	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW398_221012	Normal	EM2220286	0.04	<0.01	0.08	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW400	Off-base	10/10/2017	0445_SW400_0.3_171010	Normal	ES1725715	0.178	0.0225	**0.826**	0.164	0.103	0.648	0.0164	<0.0005	<0.002	0.0082	0.119	0.015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		2/08/2018	0445_QC206_180802	Interlab_D	611294	0.15	0.012	**0.35**	0.027	0.034	0.2	0.012	<0.001	0.007	0.004	0.028	0.006	<0.001	0.001	0.002	<0.001	<0.001	<0.001	<0.005	<0.005	<0.000005	<0.005	<0.005	0.006	0.005
			0445_QC106_180802	Field_D	ES1823005	0.0992	0.0103	**0.228**	0.034	0.031	0.129	0.0084	<0.0005	<0.002	<0.0005	0.0179	0.0063	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445_SW400_0.2_180802	Normal	ES1823005	0.113	0.0118	**0.283**	0.0237	0.0283	0.17	0.0097	<0.0005	<0.002	0.0063	0.024	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		3/11/2019	0445_SW400_0.2_191103	Normal	ES1936497	0.11	0.0084	**0.246**	0.0232	0.0218	0.136	0.0066	<0.002	<0.002	<0.002	0.0172	0.0032	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		16/11/2021	0445_SW400_211116	Normal	EM2122968	0.7	0.06	**1.51**	0.26	0.13	0.81	0.06	<0.02	<0.1	0.05	0.14	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW400_220503	Normal	EM2208382	0.22	0.02	**0.55**	0.07	0.05	0.33	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW400_221012	Normal	EM2220270	0.25	0.02	**0.57**	0.06	0.05	0.32	0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW401	Off-base	10/10/2017	0445_SW401_0.4_171010	Normal	ES1725715	0.179	0.0229	**0.687**	0.143	0.0922	0.508	0.0138	<0.0005	<0.002	0.0087	0.118	0.0113	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		3/11/2019	0445_SW401_0.2_191103	Normal	ES1936497	0.0928	0.0074	**0.217**	0.0238	0.0202	0.124	0.006	<0.002	<0.002	<0.002	0.0142	0.0024	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		16/11/2021	0445_SW401_211116	Normal	EM2122968	0.32	0.04	**0.85**	0.15	0.08	0.53	0.03	<0.02	<0.1	0.03	0.11	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW401_220503	Normal	EM2208382	0.18	0.02	**0.51**	0.07	0.06	0.33	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW401_221012	Normal	EM2220270	0.1	<0.01	**0.26**	0.05	0.02	0.16	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW403	Off-base	12/10/2017	0445_SW403_0.5_171012	Normal	ES1725997	0.0532	0.0063	**0.224**	0.0389	0.0325	0.171	0.0019	<0.0005	<0.002	<0.0005	0.0279	0.0041	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		12/11/2021	0445_SW403_211112	Normal	EM2122519	0.26	0.02	**0.59**	0.09	0.07	0.33	<0.02	<0.02	<0.1	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		5/05/2022	0445_SW403_220505	Normal	EM2208383	0.2	0.02	**0.58**	0.11	0.08	0.38	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		15/10/2022	0445_SW403_221015	Normal	EM2220271	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW404	Off-base	11/10/2017	0445_SW404_0.5_171011	Normal	ES1725716	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		1/08/2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		26/11/2018	0445_SW404_0.52_181126	Normal	ES1835585	0.0025	<0.0005	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		12/11/2021	0445_SW404_211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		17/11/2021	0445_SW404_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		5/05/2022	0445_SW404_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		15/10/2022	0445_SW404_221015	Normal	EM2220271	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW405	Off-base	12/10/2017	0445_SW405_0.2_171012	Normal	ES1725997	0.0481	0.0046	**0.23**	0.0386	0.0339	0.182	0.0016	<0.0005	<0.002	<0.0005	0.0214	0.0027	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		2/08/2018	0445_SW405_0.1_180802	Normal	ES1823003	0.0401	0.0021	**0.0997**	0.0069	0.0053	0.0596	0.0022	<0.0005	<0.002	<0.0005	0.0013	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		12/11/2021	0445_SW405_211112	Normal	EM2122519	0.16	0.02	**0.51**	0.08	0.07	0.35	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		5/05/2022	0445_SW405_220505	Normal	EM2208383	0.08	<0.01	**0.13**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		15/10/2022	0445_SW405_221015	Normal	EM2220271	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW409	Off-base	14/02/2018	0445_SW409_0.0_180214	Normal	ES1805190	0.0947	0.0062	**0.115**	0.0026	0.002	0.0204	0.0016	<0.0005	<0.002	0.0034	0.0048	0.0017	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		12/11/2021	0445_SW409_211112	Normal	EM2122519	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02

						Perfluorocarbons																								
						Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water							**0.56**	**0.07**																						
PFAS NEMP 2.0 Table 1 Health Recreational Water							*10*	*2*																						
PFAS NEMP 2.0 Table 5 Freshwater 95%						0.13	220																							
PFAS NEMP 2.0 Table 5 Freshwater 99%						0.00023	19																							
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																									
		6/05/2022	0445_SW409_220506	Normal	EM2208383	0.04	<0.01	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		15/10/2022	0445_SW409_221015	Normal	EM2220271	0.06	<0.01	**0.09**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW412	Off-base	12/10/2017	0445_SW412_0.5_171012	Normal	ES1725997	0.0482	0.0037	**0.213**	0.0245	0.0201	0.165	0.001	<0.0005	<0.002	<0.0005	0.0065	0.0025	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		2/08/2018	0445_SW412_0.1_180802	Normal	ES1823003	0.0384	0.0051	0.0674	0.005	0.0022	0.029	0.0011	<0.0005	<0.002	<0.0005	0.0064	0.0031	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		26/11/2018	0445_QC126_181126	Field_D	ES1835585	0.0406	0.0037	0.0588	0.0028	0.002	0.0182	<0.0005	<0.0005	<0.002	0.002	0.0064	0.0016	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445_SW412_0.2_181126	Normal	ES1835585	0.0383	0.0036	0.0569	0.0026	0.0019	0.0186	<0.0005	<0.0005	<0.002	0.0019	0.0068	0.0014	0.0008	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		12/11/2021	0445_SW412_211112	Normal	EM2122519	0.04	<0.01	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW412_220506	Normal	EM2208383	0.04	<0.01	**0.11**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		15/10/2022	0445_SW412_221015	Normal	EM2220271	0.02	<0.01	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW416	Off-base	11/10/2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		1/08/2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		26/11/2018	0445_SW416_0.5_181126	Normal	ES1835585	0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		12/11/2021	0445_SW416_211111	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		5/05/2022	0445_SW416_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW416_221012	Normal	EM2220271	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW424	Off-base	11/10/2017	0445_QC213	Interlab_D	567942	3.3	0.13	***5.1***	0.16	0.22	1.8	0.1	<0.01	0.1	0.11	0.36	0.08	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_QC113	Field_D	ES1725716	2.52	0.0623	***4.85***	0.131	0.126	2.33	0.0687	<0.0005	0.011	0.0752	0.435	0.0445	0.0115	0.0016	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
			0445_SW424_0.1_171011	Normal	ES1725716	2.12	0.0607	***4.14***	0.136	0.133	2.02	0.0714	<0.0005	0.01	0.0731	0.371	0.0429	0.0109	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		13/10/2017	0445_SW424_0.1_171013	Normal	ES1725997	0.706	0.0247	**1.33**	0.059	0.0626	0.622	0.0142	<0.0005	<0.002	0.0475	0.103	0.0219	0.006	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		15/11/2021	0445_QC208_211115	Interlab_D	842787	1.1	0.04	**1.83**	0.03	0.05	0.73	0.03	<0.01	0.06	0.04	0.1	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW424_211115	Normal	EM2122999	0.76	0.03	**1.16**	0.04	0.02	0.4	0.02	<0.02	<0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		7/05/2022	0445_SW424_220504	Normal	EM2208383	0.8	0.02	**1.28**	0.03	0.04	0.48	0.03	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_SW424_221011	Normal	EM2220271	0.78	0.01	**0.97**	0.02	<0.02	0.19	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW427	Off-base	16/10/2017	0445_SW427_0.0_171016	Normal	ES1726004	0.111	0.003	**0.133**	0.0045	0.0026	0.0222	0.0018	<0.0005	<0.002	0.0021	0.0046	0.0016	0.0009	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		15/11/2021	0445_SW427_211115	Normal	EM2122999	0.19	<0.01	**0.25**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW427_220506	Normal	EM2208383	0.03	<0.01	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_SW427_221011	Normal	EM2220271	0.4	0.01	**0.53**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW430	Off-base	16/10/2017	0445_SW430_0.1_171016	Normal	ES1726004	0.0465	0.0036	0.0618	0.001	0.0025	0.0153	0.0008	<0.0005	<0.002	<0.0005	0.0042	0.0015	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		2/08/2018	0445_SW430_0.1_180802	Normal	ES1823003	0.0199	0.0039	0.0364	<0.0005	0.0011	0.0165	0.0005	<0.0005	<0.002	<0.0005	0.0042	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW430_211115	Normal	EM2122999	0.1	<0.01	**0.16**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW430_220506	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_SW430_221011	Normal	EM2220271	0.13	<0.01	**0.17**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW431	Off-base	16/10/2017	0445_SW431_0.1_171016	Normal	ES1726004	0.0525	0.0032	**0.0732**	<0.0005	0.0026	0.0207	0.001	<0.0005	<0.002	<0.0005	0.0044	0.0013	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW431_211116	Normal	EM2122999	0.07	<0.01	**0.1**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW431_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_SW431_221011	Normal	EM2220271	0.14	<0.01	**0.19**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW432	Off-base	16/10/2017	0445_SW432_0.1_171016	Normal	ES1726004	0.0545	0.0044	**0.0769**	<0.0005	0.0023	0.0224	0.001	<0.0005	<0.002	<0.0005	0.0055	0.0019	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW432_211116	Normal	EM2122999	0.05	<0.01	**0.08**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW432_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_SW432_221011	Normal	EM2220271	0.06	<0.01	**0.09**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW434	Off-base	9/10/2017	0445_SW434_0.5_171011	Normal	ES1725705	0.0038	<0.0005	0.0045	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		15/11/2021	0445_SW434_211115	Normal	EM2122999	0.05	<0.01	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		6/05/2022	0445_SW434_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_SW434_221011	Normal	EM2220271	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW448	On-base	20/10/2017	0445S_SW448_0.1_171020	Normal	ES1726682	1.41	0.0428	***2.38***	0.108	0.0448	0.965	0.104	<0.0005	0.015	0.179	0.111	0.0549	0.0207	0.0026	0.0042	0.0005	0.0021	<0.0005	0.0056	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW448_211115	Normal	EM2122998	2.09	0.07	***3.23***	0.06	0.05	1.14	0.04	<0.02	<0.1	0.12	0.25	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		14/10/2022	0445_SW448_221014	Normal	EM2220286	0.31	<0.01	**0.43**	<0.02	<0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW462	Off-base	23/11/2017	0445_SW462_0.1_171123	Normal	ES1729741	0.0617	0.0059	**0.117**	0.0122	0.0159	0.0552	0.0044	<0.0005	<0.002	<0.0005	0.0123	0.0031	0.0011	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		1/08/2018	0445_SW462_0.2_180801	Normal	ES1823003	0.0265	0.0035	0.0481	<0.0005	0.0017	0.0216	0.0008	<0.0005	<0.002	<0.0005	0.0045	0.0016	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005

							Perfluorocarbons																							
							Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)
							µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
LOR							0.0003	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.000001	0.001	0.001	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water								**0.56**	**0.07**																						
PFAS NEMP 2.0 Table 1 Health Recreational Water								*10*	*2*																						
PFAS NEMP 2.0 Table 5 Freshwater 95%							0.13	220																							
PFAS NEMP 2.0 Table 5 Freshwater 99%							0.00023	19																							
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**																										
		11/11/2021	0445_SW462_211111	Normal	EM2122518		0.08	<0.01	**0.19**	0.03	0.02	0.11	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		5/05/2022	0445_QC205_220505	Interlab_D	886780		0.04	<0.01	0.06	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW462_220505	Normal	EM2208383		0.03	<0.01	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC105_220505	Field_D	EM2208383		0.02	<0.01	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_SW462_221011	Normal	EM2220271		<0.01	<0.01	0.01	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW463	Off-base	11/12/2017	0445_SW463_0.1_171211	Normal	ES1731468		0.54	0.119	**1.03**	0.0266	0.0392	0.49	0.0108	<0.0005	<0.002	0.0448	0.206	0.0173	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.006	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW463_211115	Normal	EM2122999		1.36	0.04	***2.1***	0.05	0.03	0.74	0.04	<0.02	<0.1	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		4/05/2022	0445_SW463_220504	Normal	EM2208383		0.99	0.02	**1.41**	0.04	0.02	0.42	0.02	<0.02	<0.1	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		11/10/2022	0445_QC101_221011	Field_D	EM2220271		1	0.05	**1.49**	0.03	0.03	0.49	0.02	<0.02	<0.1	0.06	0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC201_221011	Interlab_D	932350		1.7	0.06	***2.35***	0.04	0.03	0.65	0.04	<0.01	0.07	0.09	0.14	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_SW463_221011	Normal	EM2220271		1.02	0.05	**1.51**	0.03	0.03	0.49	0.02	<0.02	<0.1	0.06	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW470	Off-base	2/08/2018	0445_SW470_0.5_180802	Normal	ES1823003		0.16	0.0048	**0.33**	0.0223	0.0153	0.17	0.0057	<0.0005	<0.002	<0.0005	0.0066	0.0028	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		3/11/2019	0445_SW470_0.5_191103	Normal	ES1936497		0.179	0.0052	**0.388**	0.0258	0.0264	0.209	0.0074	<0.002	<0.002	<0.002	0.0072	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		16/11/2021	0445_SW470_211116	Normal	EM2122999		0.06	<0.01	**0.13**	0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW470_220503	Normal	EM2208383		0.19	<0.01	**0.42**	0.03	0.03	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
			0445_QC203_220504	Interlab_D	886780		0.54	0.03	**0.67**	0.03	0.02	0.13	<0.01	<0.01	<0.05	0.04	0.04	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.05	<0.05	<0.05	<0.05
			0445_QC103_220504	Field_D	EM2208381		0.46	0.02	**0.61**	0.02	<0.02	0.15	<0.02	<0.02	<0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW470_221012	Normal	EM2220286		0.04	<0.01	**0.08**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW471	Off-base	2/08/2018	0445_SW471_0.2_180802	Normal	ES1823005		0.257	0.0312	**1.14**	0.306	0.192	0.881	0.0351	<0.0005	<0.002	0.0536	0.138	0.0319	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		3/11/2019	0445_SW471_0.5_191103	Normal	ES1936497		0.69	0.0844	***2.55***	0.414	0.391	1.86	0.081	<0.002	<0.002	0.08	0.316	0.0508	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.000005	<0.005	<0.005	<0.002	<0.002
		16/11/2021	0445_SW471_211116	Normal	EM2122968		0.81	0.06	**1.82**	0.23	0.15	1.01	0.07	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW471_220503	Normal	EM2208382		1.14	0.15	***3.44***	0.45	0.4	2.3	0.12	<0.02	<0.1	0.14	0.46	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW471_221012	Normal	EM2220270		0.64	0.04	**1.4**	0.12	0.11	0.76	0.04	<0.02	<0.1	0.04	0.12	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
SW487	Off-base	2/08/2018	0445_SW487_0.01_180802	Normal	ES1823005		6.26	0.383	***9.09***	0.541	0.536	2.83	0.35	<0.0005	0.041	0.191	0.671	0.179	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.000001	<0.001	<0.001	<0.0005	<0.0005
		16/11/2021	0445_SW487_211116	Normal	EM2122968		3.45	0.3	***6.82***	0.6	0.57	3.37	0.27	<0.02	0.2	0.21	0.69	0.18	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		3/05/2022	0445_SW487_220503	Normal	EM2208382		4.13	0.32	***7.71***	0.64	0.61	3.58	0.29	<0.02	0.1	0.25	0.86	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02
		12/10/2022	0445_SW487_221012	Normal	EM2220270		4.09	0.22	***7.21***	0.48	0.48	3.12	0.26	<0.02	<0.1	0.15	0.61	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.00005	<0.05	<0.05	<0.02	<0.02

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

						4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
LOR						0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water											
PFAS NEMP 2.0 Table 1 Health Recreational Water											
PFAS NEMP 2.0 Table 5 Freshwater 95%											
PFAS NEMP 2.0 Table 5 Freshwater 99%											
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**						
SW307	On-base	17/11/2021	0445_SW307_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.17	-
		14/10/2022	0445_SW307_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.27	-
SW310	On-base	17/11/2021	0445_SW310_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.32	-
		10/10/2022	0445_SW310_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.58	-
SW311	On-base	17/11/2021	0445_SW311_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	2.37	-
		10/10/2022	0445_QC200_221010	Interlab_D	932350	<0.01	<0.05	<0.01	<0.01	3.71	0.0025
			0445_SW311_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	2.27	-
			0445_QC100_20221010	Field_D	EM2220286	<0.05	<0.05	<0.05	<0.05	2.85	-
SW313	On-base	17/11/2021	0445_QC111_211117	Field_D	EM2122998	<0.05	<0.05	<0.05	<0.05	6.87	-
			0445_QC211_211117	Interlab_D	842787	<0.01	<0.05	<0.01	<0.01	8.14	0.00645
			0445_SW313_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	6.1	-
		10/10/2022	0445_SW313_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	5.33	-
SW316	On-base	17/10/2017	0445S_SW316_0.1_171017	Normal	ES1726190	<0.002	<0.002	<0.002	<0.002	1.26	-
		17/11/2021	0445_SW316_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	1.24	-
		16/05/2022	0445S_SW316_220516	Normal	EM2209833	<0.05	<0.05	<0.05	<0.05	0.23	-
		10/10/2022	0445_SW316_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	1.6	-
SW321	On-base	17/11/2021	0445_QC112_211117	Field_D	EM2122998	<0.05	<0.05	<0.05	<0.05	7.21	-
			0445_QC212_211117	Interlab_D	842787	<0.01	<0.05	<0.01	<0.01	11.64	0.01041
			0445_SW321_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	6.75	-
		4/05/2022	0445_SW321_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	7.47	-
		10/10/2022	0445_SW321_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	1.12	-
SW322	On-base	17/11/2021	0445_SW322_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	5.34	-
		4/05/2022	0445_SW322_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	8.42	-
		10/10/2022	0445_SW322_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	1	-
SW323	On-base	17/10/2017	0445S_SW323_0.2_171017	Normal	ES1726190	<0.002	0.005	<0.002	<0.002	1.65	-
		17/11/2021	0445_SW323_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	1.09	-
		4/05/2022	0445_SW323_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.97	-
		10/10/2022	0445_SW323_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.94	-
SW324	On-base	20/10/2017	0445S_SW324_0.1_171020	Normal	ES1726682	<0.001	0.015	0.003	<0.001	2.86	-
		17/11/2021	0445_QC110_211117	Field_D	EM2122998	<0.05	<0.05	<0.05	<0.05	2.73	-
			0445_QC210_211117	Interlab_D	842787	<0.01	<0.05	<0.01	<0.01	4.43	0.00371
			0445_SW324_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	3.2	-
		4/05/2022	0445_SW324_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	1.33	-
		10/10/2022	0445_SW324_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	2.33	-
SW326	On-base	17/11/2021	0445_SW326_211117	Normal	EM2122998	<0.05	0.49	0.11	<0.05	13.2	-
		4/05/2022	0445_SW326_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.76	-
		14/10/2022	0445_SW326_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.73	-
SW332	On-base	17/10/2017	0445S_SW332_0.05_171017	Normal	ES1726190	<0.002	<0.002	<0.002	<0.002	5.47	-
		17/11/2021	0445_SW332_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.04	-
		14/10/2022	0445_SW332_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.1	-
SW333	On-base	17/10/2017	0445S_SW333_0.05_171017	Normal	ES1726190	<0.002	<0.002	<0.002	<0.002	0.68	-
		17/11/2021	0445_SW333_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	1.19	-
		4/05/2022	0445_SW333_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.13	-
		14/10/2022	0445_SW333_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.67	-
SW336	On-base	18/10/2017	0445S_QC267_171018	Interlab_D	569078	0.005	0.92	1.9	0.018	60.943	-
			0445S_QC167_171018	Field_D	ES1726433	0.006	0.93	1.3	0.02	26.8	-
			0445S_SW336_0.1_171018	Normal	ES1726433	0.006	1.03	1.27	0.016	27.4	-
		15/11/2021	0445_SW336_211115	Normal	EM2122998	<0.05	0.35	0.83	0.14	10.5	-
		4/05/2022	0445_SW336_220504	Normal	EM2208381	<0.05	0.9	1.44	1.19	15.9	-

						4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
LOR						0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water											
PFAS NEMP 2.0 Table 1 Health Recreational Water											
PFAS NEMP 2.0 Table 5 Freshwater 95%											
PFAS NEMP 2.0 Table 5 Freshwater 99%											
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**						
		14/10/2022	0445_QC206_221014	Interlab_D	932350	<0.01	0.33	0.58	0.04	10.12	0.00785
			0445_SW336_221014	Normal	EM2220286	<0.05	0.27	0.53	<0.05	8.57	-
			0445_QC106_20221014	Field_D	EM2220286	<0.05	0.25	0.47	<0.05	6.93	-
SW338	On-base	18/10/2017	0445S_SW338_0.2_171018	Normal	ES1726433	<0.002	<0.002	<0.002	<0.002	7.18	-
		10/11/2021	0445_SW338_211109	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	1.7	-
		4/05/2022	0445_SW338_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	1.25	-
		14/10/2022	0445_QC207_221014	Interlab_D	932350	<0.01	<0.05	<0.01	<0.01	1.33	0.00107
			0445_SW338_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.91	-
			0445_QC107_20221014	Field_D	EM2220286	<0.05	<0.05	<0.05	<0.05	0.98	-
SW340	On-base	18/10/2017	0445S_SW340_0.03_171018	Normal	ES1726433	<0.002	0.18	0.41	0.045	9.38	-
		10/11/2021	0445_SW340_211109	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	7.61	-
		14/10/2022	0445_QC208_221014	Interlab_D	932350	<0.01	0.05	0.03	<0.01	2.05	0.00165
			0445_SW340_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	1.22	-
			0445_QC108_20221014	Field_D	EM2220286	<0.05	<0.05	<0.05	<0.05	1.14	-
SW346	On-base	12/10/2017	0445S_SW346_0.2_171013	Normal	ES1725991	<0.001	0.052	0.037	0.001	2.64	-
		17/11/2021	0445_SW346_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	1.23	-
		4/05/2022	0445_SW346_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	1.05	-
		14/10/2022	0445_SW346_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	1.37	-
SW349	On-base	13/10/2017	0445S_QC159_171012	Field_D	ES1725991	<0.001	0.011	0.002	<0.001	1.99	-
			0445S_SW349_0.5_171013	Normal	ES1725991	<0.001	0.01	0.001	<0.001	2.1	-
		15/11/2021	0445_QC206_211115	Interlab_D	842787	<0.01	<0.05	<0.01	<0.01	1.51	0.00111
			0445_QC106_211115	Field_D	EM2122998	<0.05	<0.05	<0.05	<0.05	1	-
			0445_SW349_211115	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	1.09	-
		4/05/2022	0445_SW349_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.74	-
		14/10/2022	0445_SW349_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.8	-
SW355	On-base	13/10/2017	0445S_SW355_0.5_171013	Normal	ES1725991	<0.001	0.002	<0.001	<0.001	0.813	-
		17/11/2021	0445_QC107_211117	Field_D	EM2122998	<0.05	<0.05	<0.05	<0.05	0.36	-
			0445_QC207_211117	Interlab_D	842787	<0.01	<0.05	<0.01	<0.01	0.52	0.00041
			0445_SW355_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.36	-
		4/05/2022	0445_QC204_220504	Interlab_D	886780	<0.01	<0.05	<0.01	<0.01	0.37	0.00032
			0445_SW355_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.13	-
			0445_QC104_220504	Field_D	EM2208381	<0.05	<0.05	<0.05	<0.05	0.25	-
		14/10/2022	0445_SW355_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.28	-
SW370	On-base	23/10/2017	0445N_SW370_0.01_171023	Normal	ES1726698	<0.001	0.003	<0.001	<0.001	0.55	-
		17/11/2021	0445_SW370_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.33	-
		6/05/2022	0445_SW370_220506	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.13	-
		15/10/2022	0445_QC209_221015	Interlab_D	932350	<0.01	<0.05	<0.01	<0.01	0.29	0.00027
			0445_QC109_20221015	Field_D	EM2220286	<0.05	<0.05	<0.05	<0.05	0.2	-
			0445_SW370_221015	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.2	-
SW374	On-base	23/10/2017	0445N_SW374_0.1_171023	Normal	ES1726698	<0.001	<0.001	<0.001	<0.001	0.525	-
		17/11/2021	0445_SW374_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.17	-
		6/05/2022	0445_SW374_220506	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.07	-
		15/10/2022	0445_SW374_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.12	-
SW375	On-base	23/10/2017	0445N_QC228_171023	Interlab_D	569535	<0.001	<0.005	<0.001	<0.001	0.451	-
			0445N_QC128_171023	Field_D	ES1726698	<0.001	<0.001	<0.001	<0.001	0.465	-
			0445N_SW375_0.1_171023	Normal	ES1726698	<0.001	<0.001	<0.001	<0.001	0.44	-
		1/08/2018	0445_QC205_180801	Interlab_D	611290	<0.001	<0.005	<0.001	<0.001	0.145	0.000107
			0445_QC105_180801	Field_D	ES1823003	<0.001	<0.001	<0.001	<0.001	0.139	-
			0445_SW375_0.2_180801	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	0.144	-

						4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
LOR						0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water											
PFAS NEMP 2.0 Table 1 Health Recreational Water											
PFAS NEMP 2.0 Table 5 Freshwater 95%											
PFAS NEMP 2.0 Table 5 Freshwater 99%											
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**						
		17/11/2021	0445_SW375_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.15	-
		6/05/2022	0445_SW375_220506	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.08	-
		12/10/2022	0445_SW375_221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.08	-
SW379	On-base	16/11/2021	0445_SW379_21116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	1.07	-
		14/10/2022	0445_SW379_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.2	-
SW380	On-base	10/11/2021	0445_SW380_211108	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	0.59	-
		14/10/2022	0445_SW380_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.2	-
SW382	On-base	24/10/2017	0445E_QC131_171024	Field_D	ES1726816	<0.001	<0.001	<0.001	<0.001	0.164	-
			0445E_SW382_0.1_171024	Normal	ES1726816	<0.001	<0.001	<0.001	<0.001	0.175	-
		16/11/2021	0445_QC109_211116	Field_D	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.01	-
			0445_QC209_211116	Interlab_D	842787	<0.01	<0.05	<0.01	<0.01	<0.1	<0.00001
			0445_SW382_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.01	-
		3/05/2022	0445_SW382_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.01	-
		13/10/2022	0445_SW382_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW387	On-base	25/10/2017	0445E_SW387_0.2_171025	Normal	ES1726955	<0.001	<0.001	<0.001	<0.001	0.222	-
		16/11/2021	0445_SW387_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.24	-
		3/05/2022	0445_QC101_220503	Field_D	EM2208381	<0.05	<0.05	<0.05	<0.05	0.12	-
			0445_QC201_220503	Interlab_D	886780	<0.01	<0.05	<0.01	<0.01	0.11	0.0001
			0445_SW387_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	0.1	-
		12/10/2022	0445_SW387_221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.26	-
SW388	On-base	25/10/2017	0445E_SW388_0.2_171025	Normal	ES1726955	<0.002	<0.002	<0.002	<0.002	0.416	-
		16/11/2021	0445_SW388_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	0.54	-
		16/05/2022	0445S_SW388_220516	Normal	EM2209833	<0.05	<0.05	<0.05	<0.05	1.07	-
		12/10/2022	0445_SW388_221210	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.12	-
SW390	Off-base	13/10/2017	0445_SW390_0.5_171013	Normal	ES1725997	<0.001	<0.001	<0.001	<0.001	0.0006	-
		31/07/2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	<0.0003	-
		26/11/2018	0445_SW390_0.5_181126	Normal	ES1835585	<0.001	<0.001	<0.001	<0.001	0.001	-
		9/11/2021	0445_SW390_211109	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.01	-
		5/05/2022	0445_SW390_220505	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.01	-
		11/10/2022	0445_SW390_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW393	Off-base	16/10/2017	0445_SW393_0.1_171016	Normal	ES1726004	<0.001	0.002	<0.001	<0.001	0.0029	-
		1/08/2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	<0.0003	-
		26/11/2018	0445_SW393_0.2_181127	Normal	ES1835585	<0.001	<0.001	<0.001	<0.001	0.0009	-
		16/11/2021	0445_SW393_211116	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	<0.01	-
		6/05/2022	0445_SW393_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.01	-
		10/11/2022	0445_SW393_221110	Normal	EM2222367	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW395	Off-base	9/10/2017	0445_QC253_171010	Interlab_D	567888	<0.001	<0.005	<0.001	<0.001	0.274	-
			0445_QC153_171009	Field_D	ES1725705	<0.001	<0.001	<0.001	<0.001	0.251	-
			0445_SW395_0.5_171010	Normal	ES1725705	<0.001	<0.001	<0.001	<0.001	0.286	-
		3/11/2019	0445_SW395_0.5_191103	Normal	ES1936497	<0.002	<0.002	<0.002	<0.002	0.157	-
		16/11/2021	0445_SW395_211116	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	0.22	-
		9/05/2022	0445_SW395_220509	Normal	EM2208629	<0.05	<0.05	<0.05	<0.05	0.1	-
		10/11/2022	0445_SW395_221110	Normal	EM2222367	<0.05	<0.05	<0.05	<0.05	0.43	-
SW396	Off-base	10/10/2017	0445_SW396_0.5_171010	Normal	ES1725715	<0.001	<0.001	<0.001	<0.001	2.54	-
		2/08/2018	0445_SW396_0.5_180802	Normal	ES1823005	<0.001	<0.001	<0.001	<0.001	3.58	-
		3/11/2019	0445_SW396_0.5_191103	Normal	ES1936497	<0.002	<0.002	<0.002	<0.002	2.2	-
		16/11/2021	0445_SW396_211116	Normal	EM2122968	<0.05	<0.05	<0.05	<0.05	2.02	-
		3/05/2022	0445_SW396_220503	Normal	EM2208382	<0.05	<0.05	<0.05	<0.05	2.99	-
		12/10/2022	0445_SW396_221012	Normal	EM2220270	<0.05	<0.05	<0.05	<0.05	1.4	-

						4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
LOR						0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water											
PFAS NEMP 2.0 Table 1 Health Recreational Water											
PFAS NEMP 2.0 Table 5 Freshwater 95%											
PFAS NEMP 2.0 Table 5 Freshwater 99%											
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**						
SW397	Off-base	10/10/2017	0445_SW397_0.5_171010	Normal	ES1725715	0.002	0.024	<0.001	<0.001	18.2	-
			0445_SW397_1.0_171010	Normal	ES1725715	0.002	0.024	<0.001	<0.001	17.7	-
			0445_SW397_1.3_171010	Normal	ES1725715	0.002	0.023	<0.001	<0.001	18.2	-
		2/08/2018	0445_SW397_0.5_180802	Normal	ES1823005	0.001	0.022	<0.001	<0.001	11	-
		26/11/2018	0445_QC225_181126	Interlab_D	630629	0.002	0.013	<0.001	<0.001	17	0.012
			0445_QC125_181126	Field_D	ES1835587	0.002	0.023	<0.001	<0.001	10.7	-
			0445_SW397_0.5_181126	Normal	ES1835587	0.002	0.024	<0.001	<0.001	12.7	-
		3/11/2019	0445_QC135_191103	Field_D	ES1936497	<0.002	0.021	<0.002	<0.002	13.9	-
			0445_SW397_0.5_191103	Normal	ES1936497	<0.002	0.019	<0.002	<0.002	13.5	-
		16/11/2021	0445_SW397_211116	Normal	EM2122968	<0.05	<0.05	<0.05	<0.05	9.62	-
		3/05/2022	0445_SW397_220503	Normal	EM2208382	<0.05	<0.05	<0.05	<0.05	11.7	-
		12/10/2022	0445_SW397_221012	Normal	EM2220270	<0.05	<0.05	<0.05	<0.05	9.09	-
SW398	Off-base	12/10/2017	0445_SW398_0.5_171012	Normal	ES1725997	<0.001	<0.001	<0.001	<0.001	0.0009	-
		1/08/2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	<0.0003	-
		26/11/2018	0445_SW398_0.5_181126	Normal	ES1835585	<0.001	<0.001	<0.001	<0.001	0.0004	-
		16/11/2021	0445_SW398_211116	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	<0.01	-
		3/05/2022	0445_SW398_220503	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.01	-
		12/10/2022	0445_SW398_221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.08	-
SW400	Off-base	10/10/2017	0445_SW400_0.3_171010	Normal	ES1725715	<0.001	<0.001	<0.001	<0.001	1.27	-
		2/08/2018	0445_QC206_180802	Interlab_D	611294	<0.001	<0.005	<0.001	<0.001	0.494	0.000362
			0445_QC106_180802	Field_D	ES1823005	<0.001	<0.001	<0.001	<0.001	0.337	-
			0445_SW400_0.2_180802	Normal	ES1823005	<0.001	<0.001	<0.001	<0.001	0.391	-
		3/11/2019	0445_SW400_0.2_191103	Normal	ES1936497	<0.002	<0.002	<0.002	<0.002	0.326	-
		16/11/2021	0445_SW400_211116	Normal	EM2122968	<0.05	<0.05	<0.05	<0.05	2.25	-
		3/05/2022	0445_SW400_220503	Normal	EM2208382	<0.05	<0.05	<0.05	<0.05	0.75	-
		12/10/2022	0445_SW400_221012	Normal	EM2220270	<0.05	<0.05	<0.05	<0.05	0.77	-
SW401	Off-base	10/10/2017	0445_SW401_0.4_171010	Normal	ES1725715	<0.001	<0.001	<0.001	<0.001	1.1	-
		3/11/2019	0445_SW401_0.2_191103	Normal	ES1936497	<0.002	<0.002	<0.002	<0.002	0.291	-
		16/11/2021	0445_SW401_211116	Normal	EM2122968	<0.05	<0.05	<0.05	<0.05	1.31	-
		3/05/2022	0445_SW401_220503	Normal	EM2208382	<0.05	<0.05	<0.05	<0.05	0.72	-
		12/10/2022	0445_SW401_221012	Normal	EM2220270	<0.05	<0.05	<0.05	<0.05	0.36	-
SW403	Off-base	12/10/2017	0445_SW403_0.5_171012	Normal	ES1725997	<0.001	<0.001	<0.001	<0.001	0.336	-
		12/11/2021	0445_SW403_211112	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	0.84	-
		5/05/2022	0445_SW403_220505	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.84	-
		15/10/2022	0445_SW403_221015	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.04	-
SW404	Off-base	11/10/2017	0445_SW404_0.5_171011	Normal	ES1725716	<0.001	<0.001	<0.001	<0.001	0.0012	-
		1/08/2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	<0.0003	-
		26/11/2018	0445_SW404_0.52_181126	Normal	ES1835585	<0.001	<0.001	<0.001	<0.001	0.0025	-
		12/11/2021	0445_SW404_211112	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	<0.01	-
		17/11/2021	0445_SW404_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.01	-
		5/05/2022	0445_SW404_220505	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.01	-
		15/10/2022	0445_SW404_221015	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW405	Off-base	12/10/2017	0445_SW405_0.2_171012	Normal	ES1725997	<0.001	<0.001	<0.001	<0.001	0.333	-
		2/08/2018	0445_SW405_0.1_180802	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	0.118	-
		12/11/2021	0445_SW405_211112	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	0.74	-
		5/05/2022	0445_SW405_220505	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.13	-
		15/10/2022	0445_SW405_221015	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.04	-
SW409	Off-base	14/02/2018	0445_SW409_0.0_180214	Normal	ES1805190	<0.001	<0.001	<0.001	<0.001	0.139	-
		12/11/2021	0445_SW409_211112	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	0.02	-

						4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
LOR						0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water											
PFAS NEMP 2.0 Table 1 Health Recreational Water											
PFAS NEMP 2.0 Table 5 Freshwater 95%											
PFAS NEMP 2.0 Table 5 Freshwater 99%											
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**						
		6/05/2022	0445_SW409_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.05	-
		15/10/2022	0445_SW409_221015	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.09	-
SW412	Off-base	12/10/2017	0445_SW412_0.5_171012	Normal	ES1725997	<0.001	<0.001	<0.001	<0.001	0.272	-
		2/08/2018	0445_SW412_0.1_180802	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	0.0913	-
		26/11/2018	0445_QC126_181126	Field_D	ES1835585	<0.001	<0.001	<0.001	<0.001	0.0789	-
			0445_SW412_0.2_181126	Normal	ES1835585	<0.001	<0.001	<0.001	<0.001	0.0766	-
		12/11/2021	0445_SW412_211112	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	0.05	-
		6/05/2022	0445_SW412_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.11	-
		15/10/2022	0445_SW412_221015	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.03	-
SW416	Off-base	11/10/2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.001	<0.001	<0.001	<0.001	<0.0003	-
		1/08/2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	<0.0003	-
		26/11/2018	0445_SW416_0.5_181126	Normal	ES1835585	<0.001	<0.001	<0.001	<0.001	0.0005	-
		12/11/2021	0445_SW416_211111	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	<0.01	-
		5/05/2022	0445_SW416_220505	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.01	-
		12/10/2022	0445_SW416_221012	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW424	Off-base	11/10/2017	0445_QC213	Interlab_D	567942	<0.01	<0.05	<0.01	<0.01	6.38	-
			0445_QC113	Field_D	ES1725716	<0.001	0.002	<0.001	<0.001	5.82	-
			0445_SW424_0.1_171011	Normal	ES1725716	<0.001	0.002	<0.001	<0.001	5.05	-
		13/10/2017	0445_SW424_0.1_171013	Normal	ES1725997	<0.001	0.01	0.003	<0.001	1.68	-
		15/11/2021	0445_QC208_211115	Interlab_D	842787	<0.01	<0.05	<0.01	<0.01	2.22	0.00187
			0445_SW424_211115	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	1.36	-
		7/05/2022	0445_SW424_220504	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	1.45	-
		11/10/2022	0445_SW424_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	1.03	-
SW427	Off-base	16/10/2017	0445_SW427_0.0_171016	Normal	ES1726004	<0.001	0.001	<0.001	<0.001	0.156	-
		15/11/2021	0445_SW427_211115	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	0.25	-
		6/05/2022	0445_SW427_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.03	-
		11/10/2022	0445_SW427_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.56	-
SW430	Off-base	16/10/2017	0445_SW430_0.1_171016	Normal	ES1726004	<0.001	<0.001	<0.001	<0.001	0.0766	-
		2/08/2018	0445_SW430_0.1_180802	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	0.0471	-
		16/11/2021	0445_SW430_211115	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	0.16	-
		6/05/2022	0445_SW430_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.01	-
		11/10/2022	0445_SW430_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.17	-
SW431	Off-base	16/10/2017	0445_SW431_0.1_171016	Normal	ES1726004	<0.001	<0.001	<0.001	<0.001	0.0867	-
		16/11/2021	0445_SW431_211116	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	0.1	-
		6/05/2022	0445_SW431_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.02	-
		11/10/2022	0445_SW431_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.19	-
SW432	Off-base	16/10/2017	0445_SW432_0.1_171016	Normal	ES1726004	<0.001	<0.001	<0.001	<0.001	0.0936	-
		16/11/2021	0445_SW432_211116	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	0.08	-
		6/05/2022	0445_SW432_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.02	-
		11/10/2022	0445_SW432_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.09	-
SW434	Off-base	9/10/2017	0445_SW434_0.5_171011	Normal	ES1725705	<0.001	<0.001	<0.001	<0.001	0.0045	-
		15/11/2021	0445_SW434_211115	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	0.07	-
		6/05/2022	0445_SW434_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.02	-
		11/10/2022	0445_SW434_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	<0.01	-
SW448	On-base	20/10/2017	0445S_SW448_0.1_171020	Normal	ES1726682	<0.001	0.012	0.005	<0.001	3.09	-
		16/11/2021	0445_SW448_211115	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	3.85	-
		14/10/2022	0445_SW448_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.46	-
SW462	Off-base	23/11/2017	0445_SW462_0.1_171123	Normal	ES1729741	<0.001	<0.001	<0.001	<0.001	0.172	-
		1/08/2018	0445_SW462_0.2_180801	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	0.0608	-

						4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
						µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
LOR						0.001	0.001	0.001	0.001	0.0003	0.000001
PFAS NEMP 2.0 Table 1 Health Drinking Water											
PFAS NEMP 2.0 Table 1 Health Recreational Water											
PFAS NEMP 2.0 Table 5 Freshwater 95%											
PFAS NEMP 2.0 Table 5 Freshwater 99%											
Location_Code	**Location_Type**	**Sampled_Date_Time**	**Field_ID**	**Sample_Type**	**Lab_Report_Number**						
		11/11/2021	0445_SW462_211111	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	0.26	-
		5/05/2022	0445_QC205_220505	Interlab_D	886780	<0.01	<0.05	<0.01	<0.01	<0.1	0.00006
			0445_SW462_220505	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.05	-
			0445_QC105_220505	Field_D	EM2208383	<0.05	<0.05	<0.05	<0.05	0.03	-
		11/10/2022	0445_SW462_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	0.01	-
SW463	Off-base	11/12/2017	0445_SW463_0.1_171211	Normal	ES1731468	<0.001	<0.001	<0.001	<0.001	1.5	-
		16/11/2021	0445_SW463_211115	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	2.35	-
		4/05/2022	0445_SW463_220504	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	1.56	-
		11/10/2022	0445_QC101_221011	Field_D	EM2220271	<0.05	<0.05	<0.05	<0.05	1.8	-
			0445_QC201_221011	Interlab_D	932350	<0.01	<0.05	<0.01	<0.01	2.88	0.00241
			0445_SW463_221011	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	1.8	-
SW470	Off-base	2/08/2018	0445_SW470_0.5_180802	Normal	ES1823003	<0.001	<0.001	<0.001	<0.001	0.388	-
		3/11/2019	0445_SW470_0.5_191103	Normal	ES1936497	<0.002	<0.002	<0.002	<0.002	0.46	-
		16/11/2021	0445_SW470_211116	Normal	EM2122999	<0.05	<0.05	<0.05	<0.05	0.15	-
		3/05/2022	0445_SW470_220503	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	0.48	-
			0445_QC203_220504	Interlab_D	886780	<0.01	<0.05	<0.01	<0.01	0.87	0.0007
			0445_QC103_220504	Field_D	EM2208381	<0.05	<0.05	<0.05	<0.05	0.73	-
		12/10/2022	0445_SW470_221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	0.08	-
SW471	Off-base	2/08/2018	0445_SW471_0.2_180802	Normal	ES1823005	<0.001	<0.001	<0.001	<0.001	1.92	-
		3/11/2019	0445_SW471_0.5_191103	Normal	ES1936497	<0.002	<0.002	<0.002	<0.002	3.97	-
		16/11/2021	0445_SW471_211116	Normal	EM2122968	<0.05	<0.05	<0.05	<0.05	2.6	-
		3/05/2022	0445_SW471_220503	Normal	EM2208382	<0.05	<0.05	<0.05	<0.05	5.28	-
		12/10/2022	0445_SW471_221012	Normal	EM2220270	<0.05	<0.05	<0.05	<0.05	1.89	-
SW487	Off-base	2/08/2018	0445_SW487_0.01_180802	Normal	ES1823005	<0.001	0.022	<0.001	<0.001	12	-
		16/11/2021	0445_SW487_211116	Normal	EM2122968	<0.05	<0.05	<0.05	<0.05	9.84	-
		3/05/2022	0445_SW487_220503	Normal	EM2208382	<0.05	<0.05	<0.05	<0.05	11	-
		12/10/2022	0445_SW487_221012	Normal	EM2220270	<0.05	<0.05	<0.05	<0.05	9.54	-

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of human health screening criteria in latest monitoring round

	Lab Report Number	EM2220286	EM2220286		EM2220271	EM2220271		EM2220286	EM2220286		EM2220286	EM2220286		EM2220286	EM2220286	
	Field ID	0445_SW311_221010	0445_QC100_20221010	RPD	0445_SW463_221011	0445_QC101_221011	RPD	0445_MW321_221210	0445_QC102_20221012	RPD	0445_MW319_221012	0445_QC103_20221012	RPD	0445_MW051_20221012	0445_QC104_20221012	RPD
	Sampled Date/Time	10/10/2022 15:18	10/10/2022 15:18		11/10/2022	11/10/2022		12/10/2022 8:07	12/10/2022 8:07		12/10/2022 8:22	12/10/2022 8:22		12/10/2022 9:03	12/10/2022 9:03	
ChemName	Units	LOR														
Sum of WA DWER PFAS (n=10)*	ug/L	0.01 : 0.05 (Interlab)	2.2	2.78	23	1.75	1.75	0	0.75	0.7	7	0.26	0.31	18	0.01	0.01	0
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.74	0.97	27	1.02	1	2	0.58	0.55	5	0.2	0.24	18	0.01	0.01	0
Perfluorooctanoate (PFOA)	µg/L	0.01	0.07	0.07	0	0.05	0.05	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
Sum of PFHxS and PFOS	µg/L	0.01	1.56	1.89	19	1.51	1.49	1	0.75	0.7	7	0.26	0.31	18	0.01	0.01	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.04	0.05	22	0.03	0.03	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	0.04	0.04	0	0.03	0.03	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.82	0.92	11	0.49	0.49	0	0.17	0.15	13	0.06	0.07	15	<0.01	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.03	0	0.02	0.02	0	0.03	0.03	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	**<0.1**	**0.2**	**67**	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	0.22	0.24	9	0.06	0.06	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.26	0.29	11	0.1	0.1	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	0.05	0.04	22	<0.02	0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	2.27	2.85	23	1.8	1.8	0	0.78	0.73	7	0.26	0.31	18	0.01	0.01	0

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-30 x EQL); 30 (30-30 x EQL); 30 (>30 x EQL).
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.
Any methods in the row header relate to those used in the primary laboratory.

	Lab Report Number	EM2220286	EM2220286		EM2220286	EM2220286		EM2220286	EM2220286		EM2220286	EM2220286		EM2220286	EM2220286	
	Field ID	0445_MW056_221012	0445_QC105_20221012	RPD	0445_SW336_221014	0445_QC106_20221014	RPD	0445_SW338_221014	0445_QC107_20221014	RPD	0445_SW340_221014	0445_QC108_20221014	RPD	0445_SW370_221015	0445_QC109_20221015	RPD
	Sampled Date/Time	12/10/2022 10:04	12/10/2022 10:04		14/10/2022 11:29	14/10/2022 11:29		14/10/2022 11:54	14/10/2022 11:54		14/10/2022 12:07	14/10/2022 12:07		15/10/2022 9:52	15/10/2022 9:52	
ChemName	**Units**	**LOR**														
Sum of WA DWER PFAS (n=10)*	µg/L	0.01 : 0.05 (Interlab)	**1.35**	**0.65**	**70**	8.08	6.53	21	0.89	0.96	8	1.18	1.1	7	0.2	0.2	0
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	**0.66**	**0.3**	**75**	5.98	4.7	24	0.53	0.62	16	0.76	0.7	8	0.14	0.14	0
Perfluorooctanoate (PFOA)	µg/L	0.01	**0.08**	**0.04**	**67**	0.19	0.17	11	0.03	0.03	0	0.05	0.05	0	<0.01	<0.01	0
Sum of PFHxS and PFOS	µg/L	0.01	**1.08**	**0.53**	**68**	6.63	5.21	24	0.7	0.79	12	0.98	0.91	7	0.2	0.2	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	**0.09**	**0.05**	**57**	0.05	0.05	0	0.03	0.03	0	0.02	0.02	0	<0.02	<0.02	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	**0.1**	**0.05**	**67**	**0.07**	**0.05**	**33**	0.02	0.02	0	0.02	0.02	0	<0.02	<0.02	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	**0.42**	**0.23**	**58**	0.65	0.51	24	0.17	0.17	0	0.22	0.21	5	0.06	0.06	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	**0.03**	**<0.02**	**40**	0.1	0.08	22	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.09	0.07	25	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.1	0.09	11	**0.03**	**0.02**	**40**	0.03	0.03	0	<0.02	<0.02	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	**0.07**	**0.03**	**80**	0.23	0.21	9	0.1	0.09	11	0.07	0.06	15	<0.02	<0.02	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	**0.03**	**<0.02**	**40**	0.08	0.08	0	<0.02	<0.02	0	0.03	0.03	0	<0.02	<0.02	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.06	0.06	0	<0.02	<0.02	0	0.02	0.02	0	<0.02	<0.02	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.08	0.07	13	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.04	0.03	29	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	0.05	0.04	22	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	0.27	0.25	8	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	0.53	0.47	12	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	**1.48**	**0.7**	**72**	8.57	6.93	21	0.91	0.98	7	1.22	1.14	7	0.2	0.2	0

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-30 x EQL); 30 (30-30 x EQL); 30 (>30 x EQL).
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.
Any methods in the row header relate to those used in the primary laboratory.

	Lab Report Number	EM2222364	EM2222364		EM2220286				EM2220286	932350		EM2220271	932350		EM2220286	932350	
	Field ID	0445_OTH019_221110	0445_QC110_221110	RPD	0445_MW328_221014	0445_MW328_221014_DUP	RPD	Interlab	0445_SW311_221010	0445_QC200_221010	RPD	0445_SW463_221011	0445_QC201_221011	RPD	0445_MW321_221210	0445_QC202_221012	RPD
	Sampled Date/Time	10/11/2022 15:00	10/11/2022 15:00		14/10/2022	14/11/2022			10/10/2022 15:18	10/10/2022 15:18		11/10/2022	11/10/2022		12/10/2022 8:07	12/10/2022 8:07	
ChemName	**Units**	**LOR**															
Sum of WA DWER PFAS (n=10)*	ug/L	0.01 : 0.05 (Interlab)	0.13	0.13	0	0.18	<0.01	**179**		**2.2**	**3.56**	**47**	**1.75**	**2.78**	**45**	**0.75**	**0.09**	**157**
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	0.03	0.03	0	0.13	<0.01	**171**		**0.74**	**1.2**	**47**	**1.02**	**1.7**	**50**	**0.58**	**0.07**	**157**
Perfluorooctanoate (PFOA)	ug/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		**0.07**	**0.1**	**35**	0.05	0.06	18	<0.01	<0.01	0
Sum of PFHxS and PFOS	ug/L	0.01	0.13	0.13	0	0.18	<0.01	**179**		**1.56**	**2.4**	**42**	**1.51**	**2.35**	**44**	**0.75**	**0.09**	**157**
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		**0.04**	**0.07**	**55**	0.03	0.04	29	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		**0.04**	**0.06**	**40**	0.03	0.03	0	<0.02	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	0.1	0.1	0	0.05	<0.01	**133**		**0.82**	**1.2**	**38**	0.49	0.65	28	**0.17**	**0.02**	**158**
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		0.03	0.04	29	**0.02**	**0.04**	**67**	**0.03**	**<0.01**	**100**
Perfluorodecanesulfonic acid (PFDS)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	ug/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0		**<0.1**	**0.23**	**79**	<0.1	0.07	0	<0.1	<0.05	0
Perfluoropentanoic acid (PFPeA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		**0.22**	**0.34**	**43**	**0.06**	**0.09**	**40**	<0.02	<0.01	0
Perfluorohexanoic acid (PFHxA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		**0.26**	**0.36**	**32**	**0.1**	**0.14**	**33**	<0.02	<0.01	0
Perfluoroheptanoic acid (PFHpA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		0.05	0.06	18	**<0.02**	**0.03**	**40**	<0.02	<0.01	0
Perfluorononanoic acid (PFNA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	0.02	0	<0.02	0.01	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0		<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	ug/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	ug/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0		<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	ug/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	ug/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	ug/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ug/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0		<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	ug/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	ug/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0		<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	ug/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0		<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
Sum of PFAS	ug/L	0.01 : 0.1 (Interlab)	0.13	0.13	0	0.18	<0.01	**179**		**2.27**	**3.71**	**48**	**1.8**	**2.88**	**46**	**0.78**	**<0.1**	**155**

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-30 x EQL); 30 (30-30 x EQL); 30 (>30 x EQL).
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.
Any methods in the row header relate to those used in the primary laboratory.

	Lab Report Number	EM2220286	932350		EM2220286	932350		EM2220286	932350		EM2220286	932350		EM2220286	932350	
	Field ID	0445_MW319_221012	0445_QC203_221012	RPD	0445_MW051_20221012	0445_QC204_221012	RPD	0445_MW056_221012	0445_QC205_221012	RPD	0445_SW336_221014	0445_QC206_221014	RPD	0445_SW338_221014	0445_QC207_221014	RPD
	Sampled Date/Time	12/10/2022 8:22	12/10/2022 8:22		12/10/2022 9:03	12/10/2022 9:03		12/10/2022 10:04	12/10/2022 10:04		14/10/2022 11:29	14/10/2022 11:29		14/10/2022 11:54	14/10/2022 11:54	
ChemName	Units	LOR														
Sum of WA DWER PFAS (n=10)*	µg/L	0.01 : 0.05 (Interlab)	0.26	0.28	7	0.01	<0.05	0	1.35	1.78	27	8.08	9.44	16	**0.89**	**1.28**	**36**
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.2	0.22	10	**0.01**	**0.02**	**67**	0.66	0.84	24	5.98	6.8	13	**0.53**	**0.81**	**42**
Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	0.08	0.1	22	0.19	0.25	27	0.03	0.04	29
Sum of PFHxS and PFOS	µg/L	0.01	0.26	0.28	7	**0.01**	**0.02**	**67**	1.08	1.41	27	6.63	7.6	14	**0.7**	**1.03**	**38**
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	0.09	0.12	29	**0.05**	**0.07**	**33**	0.03	0.03	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	0.1	0.12	18	0.07	0.07	0	**0.02**	**0.03**	**40**
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.06	0.06	0	<0.01	<0.01	0	**0.42**	**0.57**	30	0.65	0.8	21	0.17	0.22	26
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	0.03	0.04	29	**0.1**	**0.15**	**40**	<0.02	0.01	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	0.09	0.08	12	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.05	0	<0.1	<0.05	0	<0.1	<0.05	0	<0.1	0.06	0	<0.1	<0.05	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	0.02	0	**0.1**	**0.14**	**33**	0.03	0.04	29
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	0.07	0.09	25	0.23	0.3	26	0.1	0.12	18
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	0.03	0.04	29	**0.08**	**0.11**	**32**	<0.02	0.02	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	0.06	0.07	15	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	0.08	0.09	12	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	0.04	0.03	29	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	0.05	<0.05	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	0.27	0.33	20	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	0.53	0.58	9	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	0.04	0	<0.05	<0.01	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.26	0.28	7	0.01	<0.1	0	1.48	1.95	27	8.57	10.12	17	**0.91**	**1.33**	**38**

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-30 x EQL); 30 (30-30 x EQL); 30 (>30 x EQL).
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory.

	Lab Report Number	EM2220286	932350		EM2220286	932350		EM2222364	941104	
	Field ID	0445_SW340_221014	0445_QC208_221014	RPD	0445_SW370_221015	0445_QC209_221015	RPD	0445_OTH019_221110	0445_QC210_221110	RPD
	Sampled Date/Time	14/10/2022 12:07	14/10/2022 12:07		15/10/2022 9:52	15/10/2022 9:52		10/11/2022	10/11/2022	
ChemName	**Units**	**LOR**								
Sum of WA DWER PFAS (n=10)*	µg/L	0.01 : 0.05 (Interlab)	**1.18**	**1.94**	**49**	**0.2**	**0.29**	**37**	0.13	0.15	14
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	**0.76**	**1.3**	**52**	**0.14**	**0.19**	**30**	0.03	0.05	**50**
Perfluorooctanoate (PFOA)	µg/L	0.01	0.05	0.06	18	<0.01	<0.01	0	<0.01	<0.01	0
Sum of PFHxS and PFOS	µg/L	0.01	**0.98**	**1.59**	**47**	0.2	0.27	30	0.13	0.15	14
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	**0.02**	**0.03**	**40**	<0.02	<0.01	0	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	**0.02**	**0.03**	**40**	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.22	0.29	27	0.06	0.08	29	0.10	0.10	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	0.02	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.05	0	<0.1	<0.05	0	<0.1	<0.05	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	**0.03**	**0.05**	**50**	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.07	0.09	25	<0.02	0.02	0	<0.02	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.04	29	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	**0.02**	**0.03**	**40**	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	0.02	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.05	0	<0.02	<0.05	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	0.03	0	<0.05	<0.01	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	**1.22**	**2.05**	**51**	**0.2**	**0.29**	**37**	0.13	0.15	14

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-30 x EQL); 30 (30-30 x EQL); 30 (>30 x EQL).
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory.

Table 4: Field Blank Results

Lab Report Number	EM2220286	EM2220286	EM2220286	EM2220286	EM2220286	EM2220286	EM2220286
Field ID	0445_QC300_20221010	0445_QC303_20221011	0445_QC304_20221012	0445_QC305_20221012	0445_QC306_20221013	0445_QC307_20221013	0445_QC309_20221014
Date	10/10/2022	11/10/2022	12/10/2022	12/10/2022	13/10/2022	13/10/2022	14/10/2022
Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate

Chemical Name	Unit	LOR							
Sum of WA DWER PFAS (n=10)*	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorocarbons									
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table 4: Field Blank Results

		EM2220286	EM2222367	932350	EM2220286	EM2220286	EM2220286	EM2222367
		0445_QC310_221015	0445_QC311_221110	0445_QC500_221015	0445_QC501_20221015	0445_QC502_20221015	0445_QC503_20221015	0445_QC504_221110
		15/10/2022	10/11/2022	15/10/2022	15/10/2022	15/10/2022	15/10/2022	10/11/2022
		Rinsate	Rinsate	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B
Chemical Name	**Unit**							
Sum of WA DWER PFAS (n=10)*	ug/L	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01
Perfluorocarbons								
Perfluorooctane sulfonic acid (PFOS)	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoate (PFOA)	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05
Sum of PFAS	µg/L	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01

APPENDIX

C

LABORATORY CERTIFICATES

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2220270**

Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: VIC_0445_PFASOMP	Page	: 1 of 2
Order number	: DEF19008	Quote number	: EM2022MWHAUS0003 (SY/139/19_Bandiana)
C-O-C number	: 43395	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Bandiana P01		
Sampler	: [redacted]		

Dates

Date Samples Received	: 17-Oct-2022 13:15	Issue Date	: 18-Oct-2022
Client Requested Due Date	: 24-Oct-2022	Scheduled Reporting Date	: **24-Oct-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 5.5°C
Receipt Detail	:	No. of samples received / analysed	: 8 / 8

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM2220270-003 : 12-Oct-2022 13:11 : 0445_SW400_221012 - Interal lab qc

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2220270-001	12-Oct-2022 11:49	0445_SW396_221012	✓
EM2220270-002	12-Oct-2022 12:11	0445_SW397_221012	✓
EM2220270-003	12-Oct-2022 13:11	0445_SW400_221012 I...	✓
EM2220270-004	12-Oct-2022 13:01	0445_SW401_221012	✓
EM2220270-005	12-Oct-2022 12:38	0445_SW471_221012	✓
EM2220270-006	12-Oct-2022 12:07	0445_SW487_221012	✓
EM2220270-007	12-Oct-2022 12:49	0445_SW470_22101	✓
EM2220270-008	12-Oct-2022 13:54	0445_SW398_221012	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

ACCOUNTS ADDRESS

- A4 - AU Tax Invoice (INV) Email [redacted]

DERP LABREPORTS

- EDI Format - ESDAT (ESDAT) Email [redacted]

CHAIN OF CUSTODY

ALS COC#: 43395 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] DATE TIME: 17/10 13:15

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana P01

ORDER NO: DEF19008

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_SW396_221012		12/10/2022 11:49 AM	Water	ALS: 2 Non ALS: 0	No	X		
002	0445_SW397_221012		12/10/2022 12:11 PM	Water	ALS: 2 Non ALS: 0	No	X		
003	0445_SW400_221012	Interal lab qc	12/10/2022 01:11 PM	Water	ALS: 6 Non ALS: 0	No	X		Internal lab qc
004	0445_SW401_221012		12/10/2022 01:01 PM	Water	ALS: 6 Non ALS: 0	No	X		Lab internal qcs
005	0445_SW471_221012		12/10/2022 12:38 PM	Water	ALS: 6 Non ALS: 0	No	X		Lab internal qcs
006	0445_SW487_221012		12/10/2022 12:07 PM	Water	ALS: 2 Non ALS: 0	No	X		
007	0445_SW470_22101		12/10/2022 12:49 PM	Water	ALS: 2 Non ALS: 0	No	X		
008	0445_SW398_221012		12/10/2022 01:54 PM	Water	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2220270

[redacted]

CHAIN OF CUSTODY

(ALS) COC#: 43395 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana P01

ORDER NO: DEF19008

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0445_SW396_221012	HDPE (no PTFE)	20 mL	00350821010304	Grey	No	
001	0445_SW396_221012	HDPE (no PTFE)	20 mL	00350821010324	Grey	No	
002	0445_SW397_221012	HDPE (no PTFE)	20 mL	00350821010162	Grey	No	
002	0445_SW397_221012	HDPE (no PTFE)	20 mL	00350821010362	Grey	No	
003	0445_SW400_221012	HDPE (no PTFE)	20 mL	00350821010278	Grey	No	
003	0445_SW400_221012	HDPE (no PTFE)	20 mL	00350821010277	Grey	No	
003	0445_SW400_221012	HDPE (no PTFE)	20 mL	00350821010316	Grey	No	
003	0445_SW400_221012	HDPE (no PTFE)	20 mL	00350821010198	Grey	No	
003	0445_SW400_221012	HDPE (no PTFE)	20 mL	00350821010152	Grey	No	
003	0445_SW400_221012	HDPE (no PTFE)	20 mL	00350821010206	Grey	No	
004	0445_SW401_221012	HDPE (no PTFE)	20 mL	00350821010225	Grey	No	
004	0445_SW401_221012	HDPE (no PTFE)	20 mL	00350821010269	Grey	No	
004	0445_SW401_221012	HDPE (no PTFE)	20 mL	00350821010327	Grey	No	
004	0445_SW401_221012	HDPE (no PTFE)	20 mL	00350821010226	Grey	No	
004	0445_SW401_221012	HDPE (no PTFE)	20 mL	00350821010123	Grey	No	
004	0445_SW401_221012	HDPE (no PTFE)	20 mL	00350821010352	Grey	No	
005	0445_SW471_221012	HDPE (no PTFE)	20 mL	00350821010166	Grey	No	
005	0445_SW471_221012	HDPE (no PTFE)	20 mL	00350821010286	Grey	No	
005	0445_SW471_221012	HDPE (no PTFE)	20 mL	00350821010287	Grey	No	
005	0445_SW471_221012	HDPE (no PTFE)	20 mL	00350821010380	Grey	No	
005	0445_SW471_221012	HDPE (no PTFE)	20 mL	00350821010164	Grey	No	
005	0445_SW471_221012	HDPE (no PTFE)	20 mL	00350821010115	Grey	No	
006	0445_SW487_221012	HDPE (no PTFE)	20 mL	00350821010223	Grey	No	
006	0445_SW487_221012	HDPE (no PTFE)	20 mL	00350821010174	Grey	No	
007	0445_SW470_22101	HDPE (no PTFE)	20 mL	00350821010252	Grey	No	
007	0445_SW470_22101	HDPE (no PTFE)	20 mL	00350821010239	Grey	No	

CHAIN OF CUSTODY

COC#: 43395 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Bandiana P01

ORDER NO: DEF19008

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

008	0445_SW398_221012	HDPE (no PTFE)	20 mL	00350821010230	Grey	No	
008	0445_SW398_221012	HDPE (no PTFE)	20 mL	00350821010325	Grey	No	

Total Bottle Count: ALS: 28, Non ALS: 0

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2220270**	Page	: 1 of 7
Amendment	: **1**		
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 17-Oct-2022 13:15
Order number	: DEF19008	Date Analysis Commenced	: 18-Oct-2022
C-O-C number	: 43395	Issue Date	: 07-Dec-2022 10:36
Sampler	: [redacted]		
Site	: Bandiana P01		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 8		
No. of samples analysed	: 6		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (7/12/22):This report has been amended following the request form B.K to transfer samples 007 and 008 from this work order and put into work order EM2220286
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW396_221012	0445_SW397_221012	0445_SW400_221012 Interal lab qc	0445_SW401_221012	0445_SW471_221012
			Sampling date / time	12-Oct-2022 11:49	12-Oct-2022 12:11	12-Oct-2022 13:11	12-Oct-2022 13:01	12-Oct-2022 12:38
Compound	CAS Number	LOR	Unit	EM2220270-001	EM2220270-002	EM2220270-003	EM2220270-004	EM2220270-005
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.09**	**0.50**	**0.06**	**0.05**	**0.12**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.08**	**0.51**	**0.05**	**0.02**	**0.11**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.68**	**3.30**	**0.32**	**0.16**	**0.76**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.02**	**0.24**	**0.02**	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.42**	**3.23**	**0.25**	**0.10**	**0.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.02**	**0.18**	<0.02	<0.02	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.07**	**0.75**	**0.05**	**0.03**	**0.12**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.14**	<0.02	<0.02	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	**0.24**	**0.02**	<0.01	**0.04**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW396_221012	0445_SW397_221012	0445_SW400_221012 Interal lab qc	0445_SW401_221012	0445_SW471_221012
				Sampling date / time	12-Oct-2022 11:49	12-Oct-2022 12:11	12-Oct-2022 13:11	12-Oct-2022 13:01	12-Oct-2022 12:38
Compound	CAS Number	LOR	Unit		EM2220270-001	EM2220270-002	EM2220270-003	EM2220270-004	EM2220270-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.40**	**9.09**	**0.77**	**0.36**	**1.89**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.10**	**6.53**	**0.57**	**0.26**	**1.40**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.30**	**8.34**	**0.70**	**0.34**	**1.74**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**79.8**	**84.9**	**97.1**	**98.3**	**91.8**
13C8-PFOA	----	0.02	%		**80.5**	**88.9**	**92.2**	**88.2**	**91.9**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW487_221012	----	----	----	----
			Sampling date / time	12-Oct-2022 12:07	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2220270-006	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.48**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.48**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**3.12**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.26**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**4.09**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.15**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.61**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.13**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.22**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW487_221012	----	----	----	----
			Sampling date / time	12-Oct-2022 12:07	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2220270-006	--------	--------	--------	--------
				Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**9.54**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**7.21**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**8.80**	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**93.5**	----	----	----	----
13C8-PFOA	----	0.02	%	**82.1**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2220270**	Page	: 1 of 6
Amendment	: **1**		
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 17-Oct-2022
Order number	: DEF19008	Date Analysis Commenced	: 18-Oct-2022
C-O-C number	: 43395	Issue Date	: 07-Dec-2022
Sampler	: [redacted]		
Site	: Bandiana P01		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 8		
No. of samples analysed	: 6		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4644717)									
EM2220270-003	0445_SW400_221012 Interal lab qc	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.32	0.27	15.0	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.25	0.21	15.1	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.06	0.06	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4644717)									
EM2220270-003	0445_SW400_221012 Interal lab qc	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.06	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4644717)									
EM2220270-003	0445_SW400_221012 Interal lab qc	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4644717) - continued									
EM2220270-003	0445_SW400_221012 Interal lab qc	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4644717)									
EM2220270-003	0445_SW400_221012 Interal lab qc	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4644717)									
EM2220270-003	0445_SW400_221012 Interal lab qc	EP231X: Sum of PFAS	----	0.01	µg/L	0.77	0.65	16.9	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.57	0.48	17.1	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.70	0.61	13.7	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4644717)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	84.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	82.7	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	86.7	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	102	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	90.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	81.8	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4644717)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	84.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	86.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	81.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.5	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	86.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	91.1	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	91.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	85.1	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	110	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4644717)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	94.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	97.5	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	90.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	86.5	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	86.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	87.3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4644717)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	86.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	87.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	92.8	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4644717) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	81.2	70.0	130
EP231P: PFAS Sums (QCLot: 4644717)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4644717)							
EM2220270-004	0445_SW401_221012	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	80.1	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	77.2	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	83.1	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	76.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	75.4	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	66.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4644717)							
EM2220270-004	0445_SW401_221012	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.5	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	93.1	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	77.4	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	86.3	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	87.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	89.8	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	81.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	83.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	79.6	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	70.3	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	73.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4644717)							
EM2220270-004	0445_SW401_221012	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	90.2	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	95.0	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	80.5	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4644717) - continued							
EM2220270-004	0445_SW401_221012	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	79.3	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	85.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	91.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	80.7	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4644717)							
EM2220270-004	0445_SW401_221012	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	86.1	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	87.8	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	86.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	75.2	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2220270**	Page	: 1 of 4
Amendment	: **1**		
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 17-Oct-2022
Site	: Bandiana P01	Issue Date	: 07-Dec-2022
Sampler	: [redacted]	No. of samples received	: 8
Order number	: DEF19008	No. of samples analysed	: 6

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_SW396_221012, 0445_SW397_221012, 0445_SW400_221012 - Interal lab qc, 0445_SW401_221012, 0445_SW471_221012, 0445_SW487_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0445_SW396_221012, 0445_SW397_221012, 0445_SW400_221012 - Interal lab qc, 0445_SW401_221012, 0445_SW471_221012, 0445_SW487_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0445_SW396_221012, 0445_SW397_221012, 0445_SW400_221012 - Interal lab qc, 0445_SW401_221012, 0445_SW471_221012, 0445_SW487_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_SW396_221012, 0445_SW397_221012, 0445_SW400_221012 - Interal lab qc, 0445_SW401_221012, 0445_SW471_221012, 0445_SW487_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_SW396_221012, 0445_SW397_221012, 0445_SW400_221012 - Interal lab qc, 0445_SW401_221012, 0445_SW471_221012, 0445_SW487_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN OF CUSTODY

ALS COC#: 43396 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Lands

ORDER NO: DEF19008

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] DATE TIME: 17/10 13-15

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_SW404_221015		15/10/2022 10:52 AM	Water	ALS: 2 Non ALS: 0	No	X		
002	0445_SW424_221110		11/10/2022 02:46 PM	Water	ALS: 2 Non ALS: 0	No	X		
003	0445_SW427_221011		11/10/2022 03:47 PM	Water	ALS: 6 Non ALS: 0	No	X		Lab Internal qc's
004	0445_SW430_221110		11/10/2022 01:12 PM	Water	ALS: 2 Non ALS: 0	No	X		
005	0445_SW431_221110		11/10/2022 02:40 PM	Water	ALS: 2 Non ALS: 0	No	X		
006	0445_SW432_221110		11/10/2022 02:08 PM	Water	ALS: 2 Non ALS: 0	No	X		
007	0445_SW434_221110		11/10/2022 01:36 PM	Water	ALS: 2 Non ALS: 0	No	X		
008	0445_SW463_221011		11/10/2022 03:03 PM	Water	ALS: 2 Non ALS: 0	No	X		
009	0445_SW390_221011		11/10/2022 12:52 PM	Water	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2220271

Telephone - 61-3-8549 9600

CHAIN OF CUSTODY

COC#: 43396 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: [redacted] 17/10 13:47

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Lands

ORDER NO: DEF19008

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_SW462_221011		11/10/2022 01:47 PM	Water	ALS: 2 Non ALS: 0	No	X		
011	0445_QC101_20221011		11/10/2022 03:04 PM	Water	ALS: 2 Non ALS: 0	No	X		
012	0445_MW357_221012		12/10/2022 03:28 PM	Water	ALS: 2 Non ALS: 0	No	X		
013	0445_SW416_221012		12/10/2022 03:46 PM	Water	ALS: 2 Non ALS: 0	No	X		
014	0445_MW361_221015		15/10/2022 08:50 AM	Water	ALS: 6 Non ALS: 0	No	X		Lab internal qc
015	0445_MW360_221015		15/10/2022 09:43 AM	Water	ALS: 6 Non ALS: 0	No	X		Lab internal qc
016	0445_MW313_221015		15/10/2022 10:30 AM	Water	ALS: 2 Non ALS: 0	No	X		
017	0445_SW403_221015		15/10/2022 11:06 AM	Water	ALS: 2 Non ALS: 0	No	X		
018	0445_SW405_221015		15/10/2022 11:16 AM	Water	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: **43396** *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: [redacted] 17/10 13:15

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Lands

ORDER NO: DEF19008

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
019	0445_SW412_221015		15/10/2022 11:39 AM	Water	ALS: 2 Non ALS: 0	No	X		
020	0445_SW409_221015		15/10/2022 12:00 PM	Water	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 43396 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Lands

ORDER NO: DEF19008

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0445_SW404_221015	HDPE (no PTFE)	20 mL	00350821010259	Grey	No	
001	0445_SW404_221015	HDPE (no PTFE)	20 mL	00350821010214	Grey	No	
002	0445_SW424_221110	HDPE (no PTFE)	20 mL	00350821010107	Grey	No	
002	0445_SW424_221110	HDPE (no PTFE)	20 mL	00350821010350	Grey	No	
003	0445_SW427_221011	HDPE (no PTFE)	20 mL	00350821010187	Grey	No	
003	0445_SW427_221011	HDPE (no PTFE)	20 mL	00350821010221	Grey	No	
003	0445_SW427_221011	HDPE (no PTFE)	20 mL	00350821010207	Grey	No	
003	0445_SW427_221011	HDPE (no PTFE)	20 mL	00350821010351	Grey	No	
003	0445_SW427_221011	HDPE (no PTFE)	20 mL	00350821010099	Grey	No	
003	0445_SW427_221011	HDPE (no PTFE)	20 mL	00350821010120	Grey	No	
004	0445_SW430_221110	HDPE (no PTFE)	20 mL	00350821010200	Grey	No	
004	0445_SW430_221110	HDPE (no PTFE)	20 mL	00350821010249	Grey	No	
005	0445_SW431_221110	HDPE (no PTFE)	20 mL	00350821010191	Grey	No	
005	0445_SW431_221110	HDPE (no PTFE)	20 mL	00350821010381	Grey	No	
006	0445_SW432_221110	HDPE (no PTFE)	20 mL	00350821010314	Grey	No	
006	0445_SW432_221110	HDPE (no PTFE)	20 mL	00350821010323	Grey	No	
007	0445_SW434_221110	HDPE (no PTFE)	20 mL	00350821010241	Grey	No	
007	0445_SW434_221110	HDPE (no PTFE)	20 mL	00350821010130	Grey	No	
008	0445_SW463_221011	HDPE (no PTFE)	20 mL	00350821010338	Grey	No	
008	0445_SW463_221011	HDPE (no PTFE)	20 mL	00350821010110	Grey	No	
009	0445_SW390_221011	HDPE (no PTFE)	20 mL	00350821010104	Grey	No	
009	0445_SW390_221011	HDPE (no PTFE)	20 mL	00350821010215	Grey	No	
010	0445_SW462_221011	HDPE (no PTFE)	20 mL	00350821010194	Grey	No	
010	0445_SW462_221011	HDPE (no PTFE)	20 mL	00350821010290	Grey	No	
011	0445_QC101_20221011	HDPE (no PTFE)	20 mL	00350821010208	Grey	No	
011	0445_QC101_20221011	HDPE (no PTFE)	20 mL	00350821010160	Grey	No	

CHAIN OF CUSTODY

(ALS) COC#: 43396 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: VIC_0445_PFASOMP

SITE: Public Lands

ORDER NO: DEF19008

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

012	0445_MW357_221012	HDPE (no PTFE)	20 mL	00350821010309	Grey	No	
012	0445_MW357_221012	HDPE (no PTFE)	20 mL	00350821010129	Grey	No	
013	0445_SW416_221012	HDPE (no PTFE)	20 mL	00350821010196	Grey	No	
013	0445_SW416_221012	HDPE (no PTFE)	20 mL	00350821010298	Grey	No	
014	0445_MW361_221015	HDPE (no PTFE)	20 mL	00350821010375	Grey	No	
014	0445_MW361_221015	HDPE (no PTFE)	20 mL	00350821010394	Grey	No	
014	0445_MW361_221015	HDPE (no PTFE)	20 mL	00350821010157	Grey	No	
014	0445_MW361_221015	HDPE (no PTFE)	20 mL	00350821010227	Grey	No	
014	0445_MW361_221015	HDPE (no PTFE)	20 mL	00350821010354	Grey	No	
014	0445_MW361_221015	HDPE (no PTFE)	20 mL	00350821010382	Grey	No	
015	0445_MW360_221015	HDPE (no PTFE)	20 mL	00350821010218	Grey	No	
015	0445_MW360_221015	HDPE (no PTFE)	20 mL	00350821010121	Grey	No	
015	0445_MW360_221015	HDPE (no PTFE)	20 mL	00350821010318	Grey	No	
015	0445_MW360_221015	HDPE (no PTFE)	20 mL	00350821010145	Grey	No	
015	0445_MW360_221015	HDPE (no PTFE)	20 mL	00350821010322	Grey	No	
015	0445_MW360_221015	HDPE (no PTFE)	20 mL	00350821010179	Grey	No	
016	0445_MW313_221015	HDPE (no PTFE)	20 mL	00350821010237	Grey	No	
016	0445_MW313_221015	HDPE (no PTFE)	20 mL	00350821010377	Grey	No	
017	0445_SW403_221015	HDPE (no PTFE)	20 mL	00350821010122	Grey	No	
017	0445_SW403_221015	HDPE (no PTFE)	20 mL	00350821010173	Grey	No	
018	0445_SW405_221015	HDPE (no PTFE)	20 mL	00350821010242	Grey	No	
018	0445_SW405_221015	HDPE (no PTFE)	20 mL	00350821010313	Grey	No	
019	0445_SW412_221015	HDPE (no PTFE)	20 mL	00350821010255	Grey	No	
019	0445_SW412_221015	HDPE (no PTFE)	20 mL	00350821010383	Grey	No	
020	0445_SW409_221015	HDPE (no PTFE)	20 mL	00350821010153	Grey	No	
020	0445_SW409_221015	HDPE (no PTFE)	20 mL	00350821010364	Grey	No	

Total Bottle Count: ALS: 52, Non ALS: 0

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2220271**	Page	: 1 of 17
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Tele4hone	: ----	Tele4hone	: [redacted]
Project	: VIC_0665_PFASOMP	Date Sam4les Received	: 1p-Oct-2022 17:15
Order number	: DEF19008	Date Analysis Commenced	: 18-Oct-2022
C-O-C number	: 67793	Issue Date	: 20-Oct-2022 15:01
Sam4ler	: [redacted]		
Site	: Public Lands		
Quote number	: SY/179/19_Bandiana		
No. of sam4les received	: 20		
No. of sam4les analysed	: 20		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This re4ort su4ersedes any 4revious re4ort(s) with this reference. Results a44ly to the sam4le(s) as submitted, unless the sam4ling was conducted by ALS. This document shall not be re4roduced, exce4t in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in com4liance with 4rocedures s4ecified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical 4rocedures used by ALS have been develo4ed from established internationally recognised 4rocedures such as those 4ublished by the USEPA, APHA, AS and NEPM. In house develo4ed 4rocedures are fully validated and are often at the client request.

Where moisture determination has been 4erformed, results are re4orted on a dry weight basis.

Where a re4orted less than (<) result is higher than the LOR, this may be due to 4rimary sam4le extract/digestate dilution and/or insufficient sam4le for analysis.

Where the LOR of a re4orted result differs from standard LOR, this may be due to high moisture content, insufficient sam4le (reduced weight em4loyed) or matrix interference.

When sam4ling time information is not 4rovided by the client, sam4ling dates are shown without a time com4onent. In these instances, the time com4onent has been assumed by the laboratory for 4rocessing 4ur4oses.

Where a result is required to meet com4liance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of re4orting
^ = This result is com4uted from individual analyte detections at or above the level of re4orting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP271X - Per- and Polyfluoroalkyl Substances (PFAS): Sam4les received in 20ml or 125ml bottles have been tested in accordance with the QSM5.7 com4liant, NATA accredited method. 30mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP271: Stable isoto4e enriched internal standards are added to sam4les 4rior to extraction. Target com4ounds have a direct analogous internal standard with the exce4tion of PFPeS, PFH4A, PFDS, PFTrDA and 10:2 FTS. These com4ounds use an internal standard that is chemically related and has a retention time close to that of the target com4ound. The DQO for internal standard res4onse is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These 4ractices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.7 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW357_221012	0445_MW361_221015	0445_MW360_221015	0445_MW313_221015	----
			Sampling date / time	12-Oct-2022 15:28	15-Oct-2022 08:50	15-Oct-2022 09:67	15-Oct-2022 10:70	----
Compound	CAS Number	LOR	Unit	EM2220271-012	EM2220271-014	EM2220271-015	EM2220271-016	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	7p5-p7-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2p03-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	755-63-6	0.01	µg/L	**0.04**	**0.03**	**0.09**	**0.01**	----
Perfluoroheptane sulfonic acid (PFHpS)	7p5-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1p37-27-1	0.01	µg/L	**0.02**	**0.08**	**0.08**	**0.01**	----
Perfluorodecane sulfonic acid (PFDS)	775-pp-7	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	7p5-22-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2p03-90-7	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	70p-26-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	7p5-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	775-3p-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	7p5-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	775-p3-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-96-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	70p-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	p2329-96-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	7p3-03-p	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	p56-91-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	71503-72-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	6151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW357_221012	0445_MW361_221015	0445_MW360_221015	0445_MW313_221015	----
				Sampling date / time	12-Oct-2022 15:28	15-Oct-2022 08:50	15-Oct-2022 09:67	15-Oct-2022 10:70	----
Compound	CAS Number	LOR	Unit		EM2220271-012	EM2220271-014	EM2220271-015	EM2220271-016	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	26668-09-p	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1391-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2755-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p5p126-p2-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	2p319-9p-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	79108-76-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120223-30-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.06**	**0.11**	**0.17**	**0.02**	----
Sum of PFHxS and PFOS	755-63-6/1p37-27-1	0.01	µg/L		**0.06**	**0.11**	**0.17**	**0.02**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	**0.11**	**0.17**	**0.02**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**88.9**	**86.1**	**88.0**	**92.6**	----
13C8-PFOA	----	0.02	%		**89.8**	**92.9**	**92.9**	**91.1**	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW404_221015	0445_SW424_221110	0445_SW427_221011	0445_SW430_221110	0445_SW431_221110
			Sampling date / time	15-Oct-2022 10:52	11-Oct-2022 16:63	11-Oct-2022 15:6p	11-Oct-2022 17:12	11-Oct-2022 16:60
Compound	CAS Number	LOR	Unit	EM2220271-001	EM2220271-002	EM2220271-003	EM2220271-004	EM2220271-005
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	7p5-p7-5	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2p03-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	755-63-6	0.01	µg/L	<0.01	**0.19**	**0.13**	**0.04**	**0.05**
Perfluoroheptane sulfonic acid (PFHpS)	7p5-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1p37-27-1	0.01	µg/L	<0.01	**0.78**	**0.40**	**0.13**	**0.14**
Perfluorodecane sulfonic acid (PFDS)	775-pp-7	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	7p5-22-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2p03-90-7	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	70p-26-6	0.02	µg/L	<0.02	**0.03**	**0.02**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	7p5-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	775-3p-1	0.01	µg/L	<0.01	**0.01**	**0.01**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	7p5-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	775-p3-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-96-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	70p-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	p2329-96-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	7p3-03-p	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	p56-91-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	71503-72-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	6151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW404_221015	0445_SW424_221110	0445_SW427_221011	0445_SW430_221110	0445_SW431_221110
				Sampling date / time	15-Oct-2022 10:52	11-Oct-2022 16:63	11-Oct-2022 15:6p	11-Oct-2022 17:12	11-Oct-2022 16:60
Compound	CAS Number	LOR	Unit		EM2220271-001	EM2220271-002	EM2220271-003	EM2220271-004	EM2220271-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	26668-09-p	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1391-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2755-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p5p126-p2-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	2p319-9p-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	79108-76-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120223-30-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**1.03**	**0.56**	**0.17**	**0.19**
Sum of PFHxS and PFOS	755-63-6/1p37-27-1	0.01	µg/L		<0.01	**0.97**	**0.53**	**0.17**	**0.19**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**1.03**	**0.56**	**0.17**	**0.19**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.2**	**94.0**	**88.1**	**89.3**	**81.9**
13C8-PFOA	----	0.02	%		**92.6**	**94.1**	**94.4**	**93.2**	**91.9**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW432_221110	0445_SW434_221110	0445_SW463_221011	0445_SW390_221011	0445_SW462_221011
			Sampling date / time	11-Oct-2022 16:08	11-Oct-2022 17:73	11-Oct-2022 15:07	11-Oct-2022 12:52	11-Oct-2022 17:6p
Compound	CAS Number	LOR	Unit	EM2220271-006	EM2220271-007	EM2220271-008	EM2220271-009	EM2220271-010
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	7p5-p7-5	0.02	µg/L	<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2p03-91-6	0.02	µg/L	<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	755-63-6	0.01	µg/L	**0.03**	<0.01	**0.49**	<0.01	**0.01**
Perfluoroheptane sulfonic acid (PFHpS)	7p5-92-8	0.02	µg/L	<0.02	<0.02	**0.02**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1p37-27-1	0.01	µg/L	**0.06**	<0.01	**1.02**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	775-pp-7	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	7p5-22-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2p03-90-7	0.02	µg/L	<0.02	<0.02	**0.06**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	70p-26-6	0.02	µg/L	<0.02	<0.02	**0.10**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	7p5-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	775-3p-1	0.01	µg/L	<0.01	<0.01	**0.05**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	7p5-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	775-p3-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-96-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	70p-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	p2329-96-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	7p3-03-p	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	p56-91-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	71503-72-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	6151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW432_221110	0445_SW434_221110	0445_SW463_221011	0445_SW390_221011	0445_SW462_221011
				Sampling date / time	11-Oct-2022 16:08	11-Oct-2022 17:73	11-Oct-2022 15:07	11-Oct-2022 12:52	11-Oct-2022 17:6p
Compound	CAS Number	LOR	Unit		EM2220271-006	EM2220271-007	EM2220271-008	EM2220271-009	EM2220271-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	26668-09-p	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1391-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2755-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p5p126-p2-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	2p319-9p-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	79108-76-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120223-30-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.09**	<0.01	**1.80**	<0.01	**0.01**
Sum of PFHxS and PFOS	755-63-6/1p37-27-1	0.01	µg/L		**0.09**	<0.01	**1.51**	<0.01	**0.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.09**	<0.01	**1.75**	<0.01	**0.01**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**87.1**	**86.9**	**88.6**	**90.3**	**85.5**
13C8-PFOA	----	0.02	%		**93.9**	**93.2**	**90.9**	**92.4**	**95.1**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_QC101_20221011	0445_SW416_221012	0445_SW403_221015	0445_SW405_221015	0445_SW412_221015
			Sampling date / time	11-Oct-2022 15:06	12-Oct-2022 15:63	15-Oct-2022 11:03	15-Oct-2022 11:13	15-Oct-2022 11:79
Compound	CAS Number	LOR	Unit	EM2220271-011	EM2220271-013	EM2220271-017	EM2220271-018	EM2220271-019
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	7p5-p7-5	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2p03-91-6	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	755-63-6	0.01	µg/L	**0.49**	<0.01	**0.02**	**0.02**	**0.01**
Perfluoroheptane sulfonic acid (PFHpS)	7p5-92-8	0.02	µg/L	**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1p37-27-1	0.01	µg/L	**1.00**	<0.01	**0.02**	**0.02**	**0.02**
Perfluorodecane sulfonic acid (PFDS)	775-pp-7	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	7p5-22-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2p03-90-7	0.02	µg/L	**0.06**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	70p-26-6	0.02	µg/L	**0.10**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	7p5-85-9	0.02	µg/L	**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	775-3p-1	0.01	µg/L	**0.05**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	7p5-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	775-p3-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-96-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	70p-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	p2329-96-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	7p3-03-p	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	p56-91-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	71503-72-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	6151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_QC101_20221011	0445_SW416_221012	0445_SW403_221015	0445_SW405_221015	0445_SW412_221015
				Sampling date / time	11-Oct-2022 15:06	12-Oct-2022 15:63	15-Oct-2022 11:03	15-Oct-2022 11:13	15-Oct-2022 11:79
Compound	CAS Number	LOR	Unit		EM2220271-011	EM2220271-013	EM2220271-017	EM2220271-018	EM2220271-019
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	26668-09-p	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1391-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2755-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p5p126-p2-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	2p319-9p-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	79108-76-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120223-30-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.80**	<0.01	**0.04**	**0.04**	**0.03**
Sum of PFHxS and PFOS	755-63-6/1p37-27-1	0.01	µg/L		**1.49**	<0.01	**0.04**	**0.04**	**0.03**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.75**	<0.01	**0.04**	**0.04**	**0.03**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**85.7**	**84.6**	**89.5**	**95.0**	**89.0**
13C8-PFOA	----	0.02	%		**91.9**	**90.9**	**93.6**	**95.9**	**93.9**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW409_221015	----	----	----	----
			Sampling date / time	15-Oct-2022 12:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2220271-020	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	7p5-p7-5	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2p03-91-6	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	755-63-6	0.01	µg/L	**0.03**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	7p5-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1p37-27-1	0.01	µg/L	**0.06**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	775-pp-7	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	7p5-22-6	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2p03-90-7	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	70p-26-6	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	7p5-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	775-3p-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	7p5-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	775-p3-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-96-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	70p-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	p2329-96-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	7p3-03-p	0.05	µg/L	<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	p56-91-3	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	71503-72-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	6151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW409_221015	----	----	----	----
				Sampling date / time	15-Oct-2022 12:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2220271-020	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	26668-09-p	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1391-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2755-71-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-3	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p5p126-p2-6	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	2p319-9p-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	79108-76-6	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120223-30-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.09**	----	----	----	----
Sum of PFHxS and PFOS	755-63-6/1p37-27-1	0.01	µg/L		**0.09**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.09**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**88.2**	----	----	----	----
13C8-PFOA	----	0.02	%		**92.5**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	35	160
13C8-PFOA	----	p1	177

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	35	160
13C8-PFOA	----	p1	177

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2220271**	Page	: 1 of L
i lreEy	: **STANTEC AUSTRALIA PTY LTD**	bar otayotC	: v EmtoED eEyal MmmsroE u elr octEe
i oEyaAy	: [redacted]	i oEyaAy	: [redacted]
WVvtess	: [redacted]	WVvtess	: [redacted]
Tele7hoEe	: ----	Tele7hoEe	: [redacted]
PtojeAy	: 2 li _. pp5_PFWSOu P	Maye SaD 7les ReAemeV	: 1L-OAy-6. 66
OtVet EcDr et	: Mv F19. . 8	Maye WEalCsrs i oDDeEAeV	: 18-OAy-6. 66
i -O-i EcDr et	: p3394	Issce Maye	: 6. -OAy-6. 66
SaD 7let	: [redacted]		
Sne	: PcrlnAbaEVs		
Qcoye EcDr et	: SY/139/19_BaEVraEa		
No0of saD 7les teAemeV	: 6.		
No0of saD 7les aEalCseV	: 6.		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

Thns te7oty sc7etseVes aEC 7temocs te7oty(s) wnjh yhns tefeteEAe0 Resclys a77IC yo yhe saD 7le(s) as scr DnyeV, cEless yhe saD 7lnEg was AoEVcAyeV r C WbS0 Thns VoAcDeEy shall Eoyr e te7toVcAeV, exAe7ynE fcll0

Thns QcalnyCi oEytol Re7otyAoEyanEs yhe followrnEg rnEfotDaynoE:

- bar otayotCMc7lnAaye (MUP) Re7oty; Relaynne PetAeEyage MnffeteEAe (RPM) aEV WAAe7yaEAe bnDns
- u eyhoV BlaEd (u B) aEV bar otayotCi oEytol S7rde (bi S) Re7oty; ReAonetCaEV WAAe7yaEAe bnDns
- u aytnx S7rde (u S) Re7oty; ReAonetCaEV WAAe7yaEAe bnDns

Signatories

Thns VoAcDeEyhas r eeE eleAytoEnAallCsrgEeV r Cyhe acyhotnzeV srgEayotnes r elow0v leAytoEnAsrgEnEg rs AattneV ocynE AoD 7lnaEAe wnjh 7toAeVctes s7eAnneV nE 61 i FR Paty110

Signatories	*Position*	*Accreditation Category*
[redacted]	SeEnot OtgaEnAi heDnsy	[redacted]

General Comments

The aEalOyrAal 7toAeVctes cseV r C WbS hame r eeE Vemelo7eV ftoD esyar lnsheV nEyetEayroEallC teAogEnseV 7toAeVctes scAh as yhose 7crlnsheV r C yhe USv PW, WPHW, WS aEV Nv Pu 0 IE hocse Vemelo7eV 7toAeVctes ate fcllCmalnVayeV aEV ate ofyeE ayyhe AlneEyteqcesy0

h hete Donsycte VeyetDrnEayroE has r eeE 7etfotDeV, tesclys ate te7otyeV oE a VtCwerghyr asns0

h hete a te7otyeV less yhaE (<) tescly ns hrghet yhaE yhe bOR, yhns DaC r e Vce yo 7tnDatC saD7le exytaAy/Vrgesyaye Vnlcyro E aEV/ot nEscffrAreEy saD7le fot aEalOsns0 h hete yhe bOR of a te7otyeV tescly Vnffets ftoD syaEVatV bOR, yhns DaCr e Vce yo hrgh Donsycte AoEyeEy, nEscffrAreEysaD7le (teVcAeV werghyeD7loCeV) ot Daytnx nEyetfeteEAe0

KeC: WEoECDocs = Refets yo saD7les whrnAh ate Eoys7eAnfrAallC7atyof yhns wotd otVet r cyfotDeV 7atyof yhe Qi 7toAess loy
i WS NcDr et = i WS tegrnsytCEcDr et ftoD Vayar ase DarEyarEeV r Ci heDrAal Wr sytaAys SetrnrAes0The i heDrAal Wr sytaAys SetrnrAe rs a VrnrsrnoE of yhe WDetrAaE i heDrAal SoAreyC0
bOR = brnDryof te7otyrEg
RPM = Relayrne PetAeEyage MnffeteEAe
= IEVrnAayes farneV Qi

Laboratory Duplicate (DUP) Report

The qcalnyC AoEytol yetD bar otayotC Mc7lnAaye tefets yo a taEVoDIC seleAyeV nEytalar otayotC s7lny0 bar otayotC Vc7lnAayes 7tornVe nEfotDayroE tegatVnEg DeyhoV 7teArsroE aEV saD7le heyetogeEenyC0 The 7etDnyyeV taEges fot yhe Relayrne PetAeEy MernayroE (RPM) of bar otayotC Mc7lnAayes ate s7eAnfreV nE WbS u eyhoV Qh I-v N/38 aEV ate Ve7eEVeEy oE yhe DagEnycVe of tesclys nE AoD7atrsoE yo yhe lernel of te7otyrEg: Rescly < 1. yrDes bOR: No brnDry, Resclyr eyweeE 1. aEV 6. yrDes bOR: . % - 5. %; Rescly> 6. yrDes bOR: . % - 6. %0

Scr -u aytnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4645008)									
v u 666. 6L1-. . 3	. pp5_Sh p6L_661. 11	v P631X: PetflcotohexaEe sclfoErnA aAnV (PFHxS)	355-p4-p	. 0 1	µg/b	. 013	. 013	. 0	. % - 5. %
		v P631X: PetflcotooAyaEe sclfoErnA aAnV (PFOS)	1L43-63-1	. 0 1	µg/b	. 0p.	. 0pp	804	. % - 6. %
		v P631X: Petflcotor cyaEe sclfoErnA aAnV (PFBS)	3L5-L3-5	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: Petflcoto7eEyaEe sclfoErnA aAnV (PFPeS)	6L. 4-91-p	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: Petflcotohe7yaEe sclfoErnA aAnV (PFH7S)	3L5-96-8	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotoVeAaEe sclfoErnA aAnV (PFMS)	335-LL-3	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
v u 666. 6L1-. 15	. pp5_u h 34. _661. 15	v P631X: PetflcotohexaEe sclfoErnA aAnV (PFHxS)	355-p4-p	. 0 1	µg/b	. 0 9	. 0 8	. 0	No brnDry
		v P631X: PetflcotooAyaEe sclfoErnA aAnV (PFOS)	1L43-63-1	. 0 1	µg/b	. 0 8	. 0 8	. 0	No brnDry
		v P631X: Petflcotor cyaEe sclfoErnA aAnV (PFBS)	3L5-L3-5	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: Petflcoto7eEyaEe sclfoErnA aAnV (PFPeS)	6L. 4-91-p	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: Petflcotohe7yaEe sclfoErnA aAnV (PFH7S)	3L5-96-8	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotoVeAaEe sclfoErnA aAnV (PFMS)	335-LL-3	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4645008)									
v u 666. 6L1-. . 3	. pp5_Sh p6L_661. 11	v P631X: PetflcotooAyaEornA aAnV (PFOW)	335-4L-1	. 0 1	µg/b	. 0 1	<. 0 1	. 0	No brnDry
		v P631X: Petflcoto7eEyaEornA aAnV (PFPeW)	6L. 4-9. -3	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotohexaEornA aAnV (PFHxW)	3. L-6p-p	. 0 6	µg/b	. 0 6	. 0 6	. 0	No brnDry
		v P631X: Petflcotohe7yaEornA aAnV (PFH7W)	3L5-85-9	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotoEoEaEornA aAnV (PFNW)	3L5-95-1	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotoVeAaEornA aAnV (PFMW)	335-L4-6	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotocEVeAaEornA aAnV (PFUEMW)	6. 58-9p-8	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotoVoVeAaEornA aAnV (PFMoMW)	3. L-55-1	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotoytnVeAaEornA aAnV (PFTtMW)	L6469-9p-8	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No brnDry
		v P631X: PetflcotoyeytaVeAaEornA aAnV (PFTeMW)	3L4-. 4-L	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No brnDry
		v P631X: Petflcotor cyaEornA aAnV (PFBW)	3L5-66-p	. 0l	µg/b	<. 0l	<. 0l	. 0	No brnDry

Scr -u aytnx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4645008) - continued									
v u 666. 6L1-. 15	. pp5_u h 34. _661. 15	v P631X: PetflcotooAyaEomAaAnV (PFOW)	335-4L-1	. 0 1	µg/b	<. 0 1	<. 0 1	. 0	No bnDry
		v P631X: Petflcoto7eEyaEomAaAnV (PFPeW)	6L. 4-9. -3	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: PetflcotohexaEomAaAnV (PFHxW)	3. L-6p-p	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: Petflcotohe7yaEomAaAnV (PFH7W)	3L5-85-9	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: PetflcotoEoEaEomAaAnV (PFNW)	3L5-95-1	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: PetflcotoVeAaEomAaAnV (PFMW)	335-L4-6	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: PetflcotocEVeAaEomAaAnV (PFUEMW)	6. 58-9p-8	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: PetflcotoVoVeAaEomAaAnV (PFMoMW)	3. L-55-1	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: PetflcotoytnVeAaEomAaAnV (PFTtMW)	L6469-9p-8	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: PetflcotoyeytaVeAaEomAaAnV (PFTeMW)	3L4-. 4-L	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
		v P631X: Petflcotor cyaEomAaAnV (PFBW)	3L5-66-p	. 0l	µg/b	<. 0l	<. 0l	. 0	No bnDry
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4645008)									
v u 666. 6L1-. . 3	. pp5_Sh p6L_661. 11	v P631X: PetflcotooAyaEe sclfoEaDnVe (FOSW)	L5p-91-4	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVoaAeynAaAnV (u eFOSWW)	6355-31-9	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVoaAeynAaAnV (v yFOSWW)	6991-5. -4	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVe (u eFOSW)	315. 4-36-8	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVe (v yFOSW)	p151-5. -6	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
		v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVoeyhaEol (u eFOSv)	6ppp8-. 9-L	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVoeyhaEol (v yFOSv)	1491-99-6	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
v u 666. 6L1-. 15	. pp5_u h 34. _661. 15	v P631X: PetflcotooAyaEe sclfoEaDnVe (FOSW)	L5p-91-4	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVoaAeynAaAnV (u eFOSWW)	6355-31-9	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVoaAeynAaAnV (v yFOSWW)	6991-5. -4	. 0 6	µg/b	<. 0 6	<. 0 6	. 0	No bnDry
		v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVe (u eFOSW)	315. 4-36-8	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVe (v yFOSW)	p151-5. -6	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
		v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVoeyhaEol (u eFOSv)	6ppp8-. 9-L	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVoeyhaEol (v yFOSv)	1491-99-6	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4645008)									
v u 666. 6L1-. . 3	. pp5_Sh p6L_661. 11	v P631X: p:6 FlcotoyeloDet sclfoEmAaAnV (p:6 FTS)	L5L16p-L6-p	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No bnDry

Scr -u ay:nx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4645008) - continued									
v u 666. 6L1-. . 3	. pp5_Sh p6L_661. 11	v P631X: 4:6 FlcotoyeloD et sclfoEmA aAnV (4:6 FTS)	6L419-9L-6	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No brnDny
		v P631X: 8:6 FlcotoyeloD et sclfoEmA aAnV (8:6 FTS)	391. 8-3p-p	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No brnDny
		v P631X: 1. :6 FlcotoyeloD et sclfoEmA aAnV (1. :6 FTS)	16. 664-4. -.	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No brnDny
v u 666. 6L1-. 15	. pp5_u h 34. _661. 15	v P631X: p:6 FlcotoyeloD et sclfoEmA aAnV (p:6 FTS)	L5L16p-L6-p	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No brnDny
		v P631X: 4:6 FlcotoyeloD et sclfoEmA aAnV (4:6 FTS)	6L419-9L-6	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No brnDny
		v P631X: 8:6 FlcotoyeloD et sclfoEmA aAnV (8:6 FTS)	391. 8-3p-p	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No brnDny
		v P631X: 1. :6 FlcotoyeloD et sclfoEmA aAnV (1. :6 FTS)	16. 664-4. -.	. 0 5	µg/b	<. 0 5	<. 0 5	. 0	No brnDny
EP231P: PFAS Sums (QC Lot: 4645008)									
v u 666. 6L1-. . 3	. pp5_Sh p6L_661. 11	v P631X: ScD of PFWS	----	. 0 1	µg/b	. 054	. 059	506	. % - 6. %
		v P631X: ScD of PFHxS aEV PFOS	355-p4-p/1L43-63-1	. 0 1	µg/b	. 053	. 05L	L03	. % - 6. %
		v P631X: ScD of PFWS (h WMv R bnsv)	----	. 0 1	µg/b	. 054	. 059	506	. % - 6. %
v u 666. 6L1-. 15	. pp5_u h 34. _661. 15	v P631X: ScD of PFWS	----	. 0 1	µg/b	. 01L	. 014	401	. % - 5. %
		v P631X: ScD of PFHxS aEV PFOS	355-p4-p/1L43-63-1	. 0 1	µg/b	. 01L	. 014	401	. % - 5. %
		v P631X: ScD of PFWS (h WMv R bnsv)	----	. 0 1	µg/b	. 01L	. 014	401	. % - 5. %

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The qcalnyC AoEytol yetD u eyhoV / bar otayotC BlaEd tefets yo aE aEalOye ftee Daytnx yo whrnAh all teageEys ate aVVeV nE yhe saDe nolcDes ot 7to7otynoEs as cseV nE syaEVatV saD7le 7te7atayroE0 The 7ct7ose of yhrs Qi 7ataDeyet rs yo DoEnyot 7oyeEyral lar otayotC AoEyaDnEayroE0 The qcalnyC AoEytol yetD bar otayotC i oEytol SaD7le (bi S) tefets yo a AetyfreV tefeteEAe Dayetral, ot a dEowE nEyetfeteEAe ftee Daytnx s7rdeV wnyh yatgey aEalOyes0The 7ct7ose of yhrs Qi 7ataDeyet rs yo DoEnyot DeyhoV 7teArsnoE aEV aAActaACnEVe7eEVeEyof saD7le Daytnx0MCEaDnA ReAometCbnDns ate r aseV oE syaynsynAal emalcayroE of 7toAesseV bi S0

Scr -u aytnx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4645008)								
v P631X: Petflcotor cyaEe sclfoEnAaAnV (PFBS)	3L5-L3-5	. 0 6	µg/b	<. 0 6	. 065 µg/b	830p	L60	13.
v P631X: Petflcoto7eEyaEe sclfoEnAaAnV (PFPeS)	6L. 4-91-p	. 0 6	µg/b	<. 0 6	. 065 µg/b	830p	L10	16L
v P631X: PetflcotohexaEe sclfoEnAaAnV (PFHxS)	355-p4-p	. 0 1	µg/b	<. 0 1	. 065 µg/b	8. 0l	480	131
v P631X: Petflcotohe7yaEe sclfoEnAaAnV (PFH7S)	3L5-96-8	. 0 6	µg/b	<. 0 6	. 065 µg/b	9p06	490	13p
v P631X: PetflcotooAyaEe sclfoEnAaAnV (PFOS)	1L43-63-1	. 0 1	µg/b	<. 0 1	. 065 µg/b	9. 09	450	1p.
v P631X: PetflcotoVeAaEe sclfoEnAaAnV (PFMS)	335-LL-3	. 0 6	µg/b	<. 0 6	. 065 µg/b	1. 4	530	1p6
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4645008)								
v P631X: Petflcotor cyaEomAaAnV (PFBW)	3L5-66-p	. 0l	µg/b	<. 0l	1065 µg/b	8L03	L30	169
v P631X: Petflcoto7eEyaEomAaAnV (PFPeW)	6L. 4-9. -3	. 0 6	µg/b	<. 0 6	. 065 µg/b	930L	L60	169
v P631X: PetflcotohexaEomAaAnV (PFHxW)	3. L-6p-p	. 0 6	µg/b	<. 0 6	. 065 µg/b	L40	L60	169
v P631X: Petflcotohe7yaEomAaAnV (PFH7W)	3L5-85-9	. 0 6	µg/b	<. 0 6	. 065 µg/b	9. 05	L60	13.
v P631X: PetflcotooAyaEomAaAnV (PFOW)	335-4L-1	. 0 1	µg/b	<. 0 1	. 065 µg/b	8p0l	L10	133
v P631X: PetflcotoEoEaEomAaAnV (PFNW)	3L5-95-1	. 0 6	µg/b	<. 0 6	. 065 µg/b	850l	490	13.
v P631X: PetflcotoVeAaEomAaAnV (PFMW)	335-L4-6	. 0 6	µg/b	<. 0 6	. 065 µg/b	L40p	L10	169
v P631X: PetflcotocEVeAaEomAaAnV (PFUEMW)	6. 58-9p-8	. 0 6	µg/b	<. 0 6	. 065 µg/b	890l	490	133
v P631X: PetflcotoVoVeAaEomAaAnV (PFMoMW)	3. L-55-1	. 0 6	µg/b	<. 0 6	. 065 µg/b	840	L60	13p
v P631X: PetflcotoytnVeAaEomAaAnV (PFTtMW)	L6469-9p-8	. 0 6	µg/b	<. 0 6	. 065 µg/b	860L	450	1pp
v P631X: PetflcotoyeytaVeAaEomAaAnV (PFTeMW)	3L4-. 4-L	. 0 5	µg/b	<. 0 5	. 0465 µg/b	16.	L10	136
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4645008)								
v P631X: PetflcotooAyaEe sclfoEaDnVe (FOSW)	L5p-91-4	. 0 6	µg/b	<. 0 6	. 065 µg/b	1. .	4L0	13L
v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVe (u eFOSW)	315. 4-36-8	. 0 5	µg/b	<. 0 5	. 0465 µg/b	960l	480	1p1
v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVe (v yFOSW)	p151-5. -6	. 0 5	µg/b	<. 0 5	. 0465 µg/b	9405	L. 0	13.
v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVoeyhaEol (u eFOSv)	6ppp8-. 9-L	. 0 5	µg/b	<. 0 5	. 0465 µg/b	8909	L. 0	13.
v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVoeyhaEol (v yFOSv)	1491-99-6	. 0 5	µg/b	<. 0 5	. 0465 µg/b	9. 04	L. 0	13.
v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVoaAeynAaAnV (u eFOSWW)	6355-31-9	. 0 6	µg/b	<. 0 6	. 065 µg/b	8L09	450	134
v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVoaAeynAaAnV (v yFOSWW)	6991-5. -4	. 0 6	µg/b	<. 0 6	. 065 µg/b	8504	410	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4645008)								
v P631X: p:6 FlcotoyeloDet sclfoEnAaAnV (p:6 FTS)	L5L16p-L6-p	. 0 5	µg/b	<. 0 5	. 065 µg/b	8504	430	1p3
v P631X: 4:6 FlcotoyeloDet sclfoEnAaAnV (4:6 FTS)	6L419-9L-6	. 0 5	µg/b	<. 0 5	. 065 µg/b	8p0p	4p0	1p.
v P631X: 8:6 FlcotoyeloDet sclfoEnAaAnV (8:6 FTS)	391. 8-3p-p	. 0 5	µg/b	<. 0 5	. 065 µg/b	1. .	4L0	138

Scr -u aytnx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4645008) - continued								
v P631X: 1. :6 FlcotoyeloDet sclfoEmAaAnV (1. :6 FTS)	16. 664-4. -.	. 0 5	µg/b	<. 0 5	. 065 µg/b	8309	L. 0	13.
EP231P: PFAS Sums (QCLot: 4645008)								
v P631X: ScD of PFWS	----	. 0 1	µg/b	<. 0 1	----	----	----	----
v P631X: ScD of PFHxS aEV PFOS	355-p4-p/1L 43-63-1	. 0 1	µg/b	<. 0 1	----	----	----	----
v P631X: ScD of PFWS (h WMv R bnsy)	----	. 0 1	µg/b	<. 0 1	----	----	----	----

Matrix Spike (MS) Report

The qcalnyC AoEytol yetD u aytnx S7nde (u S) tefets yo aE nEytalar otayotC s7lny saD7le s7ndeV wnyh a te7teseEyaynne sey of yatgey aEalOyes0 The 7ct7ose of yhns Qi 7ataDeyet ns yo DoEnyot 7oyeEyal Daytnx effeAys oE aEalOye teAometres0SyayA ReAometCbnDns as 7et lar otayotCMaya QcalnyCOr jeAynnes (MQOs)0lVeal teAometCtaEges syayeV DaCr e wannneV nEyhe enneEyof saD7le Daytnx nEyetfeteEAe0

Scr -u aytnx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4645008)							
v u 666. 6L1-. 1p	. pp5_u h 341_661. 15	v P631X: Petflcotor cyaEe sclfoEmAaAnV (PFBS)	3L5-L3-5	. 065 µg/b	8901	L60	13.
		v P631X: Petflcoto7eEyaEe sclfoEmAaAnV (PFPeS)	6L. 4-91-p	. 065 µg/b	8508	L10	16L
		v P631X: Petflcotohexa Ee sclfoEmAaAnV (PFHxS)	355-p4-p	. 065 µg/b	8108	480	131
		v P631X: Petflcotohe7yaEe sclfoEmAaAnV (PFH7S)	3L5-96-8	. 065 µg/b	8L05	490	13p
		v P631X: PetflcotooAyaEe sclfoEmAaAnV (PFOS)	1L43-63-1	. 065 µg/b	LL0L	450	1p.
		v P631X: PetflcotoVeAaEe sclfoEmAaAnV (PFMS)	335-LL-3	. 065 µg/b	L803	530	1p6
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4645008)							
v u 666. 6L1-. 1p	. pp5_u h 341_661. 15	v P631X: Petflcotor cyaEomAaAnV (PFBW)	3L5-66-p	1065 µg/b	L30	L30	169
		v P631X: Petflcoto7eEyaEomAaAnV (PFPeW)	6L. 4-9. -3	. 065 µg/b	L908	L60	169
		v P631X: PetflcotohexaEomAaAnV (PFHxW)	3. L-6p-p	. 065 µg/b	8p06	L60	169
		v P631X: Petflcotohe7yaEomAaAnV (PFH7W)	3L5-85-9	. 065 µg/b	860L	L60	13.
		v P631X: PetflcotooAyaEomAaAnV (PFOW)	335-4L-1	. 065 µg/b	8L08	L10	133
		v P631X: PetflcotoEoEaEomAaAnV (PFNW)	3L5-95-1	. 065 µg/b	9p03	490	13.
		v P631X: PetflcotoVeAaEomAaAnV (PFMW)	335-L4-6	. 065 µg/b	8501	L10	169
		v P631X: PetflcotocEVeAaEomAaAnV (PFUEMW)	6. 58-9p-8	. 065 µg/b	8. 08	490	133
		v P631X: PetflcotoVoVeAaEomAaAnV (PFMoMW)	3. L-55-1	. 065 µg/b	8804	L60	13p
		v P631X: PetflcotoytnVeAaEomAaAnV (PFTtMW)	L6469-9p-8	. 065 µg/b	L509	450	1pp
		v P631X: PetflcotoyeytaVeAaEomAaAnV (PFTeMW)	3L4-. 4-L	. 0465 µg/b	8109	L10	136
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4645008)							
v u 666. 6L1-. 1p	. pp5_u h 341_661. 15	v P631X: PetflcotooAyaEe sclfoEaDnVe (FOSW)	L5p-91-4	. 065 µg/b	9L01	4L0	13L
		v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVe (u eFOSW)	315. 4-36-8	. 0465 µg/b	940	480	1p1
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVe (v yFOSW)	p151-5. -6	. 0465 µg/b	L40L	L. 0	13.

Scr -u aytnx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4645008) - continued							
v u 666. 6L1-. 1p	. pp5_u h 341_661. 15	v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVoeyhaEol (u eFOSv)	6ppp8-. 9-L	. 0465 µg/b	8109	L. 0	13.
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVoeyhaEol (v yFOSv)	1491-99-6	. 0465 µg/b	890	L. 0	13.
		v P631X: N-u eyhCl 7etflcotooAyaEe sclfoEaDnVoaAeynA aAnV (u eFOSWWj	6355-31-9	. 065 µg/b	8109	450	134
		v P631X: N-v yhCl 7etflcotooAyaEe sclfoEaDnVoaAeynA aAnV (v yFOSWWj	6991-5. -4	. 065 µg/b	440L	410	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4645008)							
v u 666. 6L1-. 1p	. pp5_u h 341_661. 15	v P631X: p:6 FlcotoyeloDet sclfoEnAaAnV (p:6 FTS)	L5L16p-L6-p	. 065 µg/b	8108	430	1p3
		v P631X: 4:6 FlcotoyeloDet sclfoEnAaAnV (4:6 FTS)	6L419-9L-6	. 065 µg/b	8L08	4p0	1p.
		v P631X: 8:6 FlcotoyeloDet sclfoEnAaAnV (8:6 FTS)	391. 8-3p-p	. 065 µg/b	9p0	4L0	138
		v P631X: 1. :6 FlcotoyeloDet sclfoEnAaAnV (1. :6 FTS)	16. 664-4. -.	. 065 µg/b	L10	L. 0	13.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2220271**	Page	: 1 of 4
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0554_PFASOMP	Date Samples Received	: 17-Oct-2022
Site	: Public Lands	Issue Date	: 20-Oct-2022
Sampler	: [redacted]	XoYof samples received	: 20
Order number	: DEF19008	XoYof samples analysed	: 20

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

. rief method summaries and references are also provided to assist in traceabilityY

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) ReportY

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding timesNthis should be taken into consideration when interpreting resultsY

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 856N APHAN AS and XEPM) based on the sample container providedY Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and rerunsYA listing of breaches (if any) is provided hereinY

Holding time for leachate methods (eYgY TCLP) vary according to the analytes reportedY Assessment compares the leach date with the shortest analyte holding time for the equivalent soil methodY These are: organics 15 daysNmercury 28 days & other metals 180 daysY A recorded breach does not guarantee a breach for all non-volatile parametersY

Holding times for ***VOC in soils*** vary according to analytes of interestY Vinyl Chloride and Styrene holding time is 7 days; others 15 daysY A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concernY

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding timeY

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0554_SW525_221110N	0554_SW527_221011N	**11-Oct-2022**	**18-Oct-2022**	09-Apr-2023	✓	**18-Oct-2022**	09-Apr-2023	✓
0554_SW530_221110N	0554_SW531_221110N							
0554_SW532_221110N	0554_SW535_221110N							
0554_SW563_221011N	0554_SW390_221011N							
0554_SW562_221011N	0554_QC101_20221011							
HDPE (no PTFE) (EP231X)								
0554_MW347_221012N	0554_SW516_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
HDPE (no PTFE) (EP231X)								
0554_SW505_221014N	0554_MW361_221014N	**15-Oct-2022**	**18-Oct-2022**	13-Apr-2023	✓	**18-Oct-2022**	13-Apr-2023	✓
0554_MW360_221014N	0554_MW313_221014N							
0554_SW503_221014N	0554_SW504_221014N							
0554_SW512_221014N	0554_SW509_221014							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0554_SW525_221110N	0554_SW527_221011N	**11-Oct-2022**	**18-Oct-2022**	09-Apr-2023	✓	**18-Oct-2022**	09-Apr-2023	✓
0554_SW530_221110N	0554_SW531_221110N							
0554_SW532_221110N	0554_SW535_221110N							
0554_SW563_221011N	0554_SW390_221011N							
0554_SW562_221011N	0554_QC101_20221011							
HDPE (no PTFE) (EP231X)								
0554_MW347_221012N	0554_SW516_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
HDPE (no PTFE) (EP231X)								
0554_SW505_221014N	0554_MW361_221014N	**15-Oct-2022**	**18-Oct-2022**	13-Apr-2023	✓	**18-Oct-2022**	13-Apr-2023	✓
0554_MW360_221014N	0554_MW313_221014N							
0554_SW503_221014N	0554_SW504_221014N							
0554_SW512_221014N	0554_SW509_221014							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0554_SW525_221110N	0554_SW527_221011N	**11-Oct-2022**	**18-Oct-2022**	09-Apr-2023	✓	**18-Oct-2022**	09-Apr-2023	✓
0554_SW530_221110N	0554_SW531_221110N							
0554_SW532_221110N	0554_SW535_221110N							
0554_SW563_221011N	0554_SW390_221011N							
0554_SW562_221011N	0554_QC101_20221011							
HDPE (no PTFE) (EP231X)								
0554_MW347_221012N	0554_SW516_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
HDPE (no PTFE) (EP231X)								
0554_SW505_221014N	0554_MW361_221014N	**15-Oct-2022**	**18-Oct-2022**	13-Apr-2023	✓	**18-Oct-2022**	13-Apr-2023	✓
0554_MW360_221014N	0554_MW313_221014N							
0554_SW503_221014N	0554_SW504_221014N							
0554_SW512_221014N	0554_SW509_221014							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0554_SW525_221110N	0554_SW527_221011N	**11-Oct-2022**	**18-Oct-2022**	09-Apr-2023	✓	**18-Oct-2022**	09-Apr-2023	✓
0554_SW530_221110N	0554_SW531_221110N							
0554_SW532_221110N	0554_SW535_221110N							
0554_SW563_221011N	0554_SW390_221011N							
0554_SW562_221011N	0554_QC101_20221011							
HDPE (no PTFE) (EP231X)								
0554_MW347_221012N	0554_SW516_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
HDPE (no PTFE) (EP231X)								
0554_SW505_221014N	0554_MW361_221014N	**15-Oct-2022**	**18-Oct-2022**	13-Apr-2023	✓	**18-Oct-2022**	13-Apr-2023	✓
0554_MW360_221014N	0554_MW313_221014N							
0554_SW503_221014N	0554_SW504_221014N							
0554_SW512_221014N	0554_SW509_221014							
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0554_SW525_221110N	0554_SW527_221011N	**11-Oct-2022**	**18-Oct-2022**	09-Apr-2023	✓	**18-Oct-2022**	09-Apr-2023	✓
0554_SW530_221110N	0554_SW531_221110N							
0554_SW532_221110N	0554_SW535_221110N							
0554_SW563_221011N	0554_SW390_221011N							
0554_SW562_221011N	0554_QC101_20221011							
HDPE (no PTFE) (EP231X)								
0554_MW347_221012N	0554_SW516_221012	**12-Oct-2022**	**18-Oct-2022**	10-Apr-2023	✓	**18-Oct-2022**	10-Apr-2023	✓
HDPE (no PTFE) (EP231X)								
0554_SW505_221014N	0554_MW361_221014N	**15-Oct-2022**	**18-Oct-2022**	13-Apr-2023	✓	**18-Oct-2022**	13-Apr-2023	✓
0554_MW360_221014N	0554_MW313_221014N							
0554_SW503_221014N	0554_SW504_221014N							
0554_SW512_221014N	0554_SW509_221014							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processedYActual rate should be greater than or equal to the expected rateYA listing of breaches is provided in the Summary of OutliersY

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specificationY

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231B	2	20	**10.00**	**10.00**	✓	XEPM 2013 . 3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231B	1	20	**5.00**	**5.00**	✓	XEPM 2013 . 3 & ALS QC Standard
Method . lanks (M.)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231B	1	20	**5.00**	**5.00**	✓	XEPM 2013 . 3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231B	1	20	**5.00**	**5.00**	✓	XEPM 2013 . 3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and XEPMY. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231B	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS. Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 4.2 Table B-14 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 4.2 Table B-14 requirements.

Cardno

Chain of Custody

Sheet 1 of 1

Environmental Division
Melbourne
Work Order Reference
EM2222364

Telephone : + 61-3-8549 9600

PM Name: [redacted]
Phone: [redacted] **Fax:** [redacted] **Mobile:** [redacted]
Address: [redacted]
PM Email: [redacted]
Project Number: VIC_0445_PFASOMP
Order Number: DEF19008
Site ID: Bandiana - P02
Laboratory (name, phone,fax no & contact person) : ALS

Sample ID	Laboratory ID	Container	Sampling Date	Sampling Time	Sample Matrix: Water	Sample Matrix: Soil	Sample preservation: Ice	PFAS Full Suite	HOLD
0445_OTH019_221110		2x20ml PFAS	10/11/2022		X		X	X	
0445_QC110_221110		2x20ml PFAS	10/11/2022		X		X	X	

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples.

Sampler name: (print and signature) [redacted] Date: 10/11/2022

Relinquished by (Sampler): (print and signature)	Date	Time	Received by (Courier/Lab): (print and signature)	Date	Time
[redacted]	11/11/2022		[redacted]	11/11/22	17:20
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2222364**	Page	: 1 of 5
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 11-Nov-2022 17:20
Order number	: DEF19008	Date Analysis Commenced	: 14-Nov-2022
C-O-C number	: ----	Issue Date	: 16-Nov-2022 16:44
Sampler	: ----		
Site	: Bandiana-P02		
Quote number	: EN/024/		
No. of samples received	: 2		
No. of samples analysed	: 2		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0445_OTH019_221110	0445_QC110_221110	----	----	----
			Sampling date / time	10-Nov-2022 00:00	10-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2222364-001	EM2222364-002	--------	--------	--------
				Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.10**	**0.10**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.03**	**0.03**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0445_OTH019_221110	0445_QC110_221110	----	----	----
			Sampling date / time	10-Nov-2022 00:00	10-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2222364-001	EM2222364-002	-------	-------	-------
				Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.13**	**0.13**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.13**	**0.13**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.13**	**0.13**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**96.6**	**99.7**	----	----	----
13C8-PFOA	----	0.02	%	**99.1**	**102**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2222364**	Page	: 1 of 5
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 11-Nov-2022
Order number	: DEF19008	Date Analysis Commenced	: 14-Nov-2022
C-O-C number	: ----	Issue Date	: 16-Nov-2022
Sampler	: ----		
Site	: Bandiana-P02		
Quote number	: EN/024/		
No. of samples received	: 2		
No. of samples analysed	: 2		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4702618)									
EM2222283-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4702618)									
EM2222283-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.43	0.39	9.2	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.12	0.11	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.10	0.10	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4702618)									
EM2222283-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4702618) - continued									
EM2222283-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4702618)									
EM2222283-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.08	0.08	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4702618)									
EM2222283-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.83	0.79	4.9	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.03	40.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.83	0.79	4.9	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4702618)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	105	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	93.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	91.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	98.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	97.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	95.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4702618)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	99.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.1	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	92.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.9	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	103	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.3	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4702618)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	96.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	104	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.3	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	114	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	88.3	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	97.3	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	86.3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4702618)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	102	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	109	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4702618) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	81.9	70.0	130
EP231P: PFAS Sums (QCLot: 4702618)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2222364**	Page	: 1 of 4
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 11-Nov-2022
Site	: Bandiana-P02	Issue Date	: 16-Nov-2022
Sampler	: ----	No. of samples received	: 2
Order number	: DEF19008	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	17	5.88	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	17	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445_OTH019_221110,	0445_QC110_221110	**10-Nov-2022**	**15-Nov-2022**	09-May-2023	✓	**15-Nov-2022**	09-May-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0445_OTH019_221110,	0445_QC110_221110	**10-Nov-2022**	**15-Nov-2022**	09-May-2023	✓	**15-Nov-2022**	09-May-2023	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0445_OTH019_221110,	0445_QC110_221110	**10-Nov-2022**	**15-Nov-2022**	09-May-2023	✓	**15-Nov-2022**	09-May-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445_OTH019_221110,	0445_QC110_221110	**10-Nov-2022**	**15-Nov-2022**	09-May-2023	✓	**15-Nov-2022**	09-May-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0445_OTH019_221110,	0445_QC110_221110	**10-Nov-2022**	**15-Nov-2022**	09-May-2023	✓	**15-Nov-2022**	09-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	17	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Cardno

Chain of Custody

Sheet 1 of 1

Environmental Division Melbourne
Work Order Reference
EM2222367

Telephone : +61-3-8549 9600

12/11, BC

PM Name: [redacted]
Phone: [redacted] Fax: [redacted] Mobile: [redacted]
Address: [redacted]
PM Email [redacted]
Project Number: VIC_0445_PFASOMP
Order Number: DEF19008
Site ID: Bandiana - Public Lands
Laboratory (name, phone,fax no & contact person) : ALS

	Sample ID	Laboratory ID	Container	Sampling Date	Sampling Time	Sample Matrix: Water	Soil				Sample preservation: Ice				Anal: PFAS Full Suite											HOLD
1	0445_SW393_221110		2x20ml PFAS	10/11/2022		X					X				X											
2	0445_SW395_221110		2x20ml PFAS	10/11/2022		X					X				X											
3	0445_QC311_221110		2x20ml PFAS	10/11/2022		X					X				X											
4	0445_QC504_221110		2x20ml PFAS	10/11/2022		X					X				X											

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples.

Sampler name: (print and signature)
Maya Brennan
Date: 10/11/2022

Relinquished by (Sampler): (print and signature)	Date	Time	Received by: (print and signature)	Date	Time
Maya Brennan	11/11/2022		[redacted]	11/11/22	17.28
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2222367**	Page	: 1 of 5
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP	Date Samples Received	: 11-Nov-2022 17:20
Order number	: DEF19008	Date Analysis Commenced	: 14-Nov-2022
C-O-C number	: ----	Issue Date	: 16-Nov-2022 13:10
Sampler	: ----		
Site	: Bandiana-Public Lands		
Quote number	: EN/024/		
No. of samples received	: 4		
No. of samples analysed	: 4		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0445_SW393_221110	0445_SW395_221110	0445_QC311_221110	0445_QC504_221110	----
			Sampling date / time	10-Nov-2022 00:00	10-Nov-2022 00:00	10-Nov-2022 00:00	10-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	EM2222367-001	EM2222367-002	EM2222367-003	EM2222367-004	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.03**	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	**0.20**	<0.01	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	**0.18**	<0.01	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445_SW393_221110	0445_SW395_221110	0445_QC311_221110	0445_QC504_221110	----
				Sampling date / time	10-Nov-2022 00:00	10-Nov-2022 00:00	10-Nov-2022 00:00	10-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2222367-001	EM2222367-002	EM2222367-003	EM2222367-004	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.43**	<0.01	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.38**	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.41**	<0.01	<0.01	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**88.9**	**98.5**	**89.3**	**87.9**	----
13C8-PFOA	----	0.02	%		**96.1**	**97.0**	**96.1**	**99.0**	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EM2222364**	Page	: 1 of 2
y l@i b	: **STANTEC AUSTRALIA PTY LTD**	5aLorabort	: ni E@oi v ei bal m@G@i DelLouri e
y oi baMb	: [redacted]	y oi baMb	: [redacted]
ckkress	: [redacted]	ckkress	: [redacted]
TeleRVbi e	: 7777	TeleRVbi e	: [redacted]
Pro9eMb	: wVyj 0224j PFc , _ DP	mabe , av RIes 3 eMe@ek	: 117OoE7N0NN
_ rker i uv Ler	: mn F18006	mabe ci alt s@ y ov v ei Mek	: 127OoE7N0NN
y 7_ 7y i uv Ler	: 7777	Vssue mabe	: 167OoE7N0NN
, av RIer	: 7777		
, @e	: Bai k@i a7PuLI@M5ai ks		
Quobe i uv Ler	: n O/0N2/		
Oo. of sav RIes reMe@ek	: 2		
Oo. of sav RIes ai alt sek	: 2		

TW@s reRorb suRersekes ai t RreE@ous reRorb(s) S@W bW@s referei Me. 3esulbs aRRIt bo bVe savRIe(s) as suLv@ekd ui less bVe savRI@g Sas Mbi kuMek Lt c5, . TW@s koMuv ei b sVall i obLe reRrokuMekdexMeRb@C full.

TW@s Qual@t y oi brol 3eRorb Mbi ba@s bVe folloS@g @forv ab@i :

- 5aLorabort muRI@abe (mUP) 3eRorb; 3elab@ee PerMei bage m@ferei Me (3Pm) ai k cMeRbai Me 5V@s
- DebVok Blai k (DB) ai k 5aLorabort y oi brol , R@e (5y ,) 3eRorb; 3eMbEert ai k cMeRbai Me 5V@s
- Dabr@, R@e (D,) 3eRorb; 3eMbEert ai k cMeRbai Me 5V@s

Signatories

TW@s koMuv ei bVas Leei eleMbroi @allt s@i ek Lt bVe aubVor2ek s@i abor@s LeloS. nleMbroi @Ms@i @g @ MarR@k oub@ Mov RI@i Me S@W RroMekures sReM@ek @ N1 y F3 Parb11.

Signatories	*Position*	*Accreditation Category*
[redacted]	, ei @r _ rgai @My Wev @b	[redacted]

General Comments

TWé ai alt bOal RroMekures usek Lt c5, WéEe Leei keEeloRek frov esbaLIGWék Cberi abGi allt reMogiGek RroMekures suMW as bWose RuLIGWék Lt bWé U, nPcd cPHcd c, ai k OnPD. Vi Wouse keEeloRek RroMekures are fullt EalGabek ai k are ofbei abbWé MGi brequesb

A Wére v oGbure keberv CabGi Wés Leei Rerforv ekdresulbs are reRorbek oi a krt SeGWbLasG.

A Wére a reRorbek less bWai (<) resulb G WGWér bWai bWé 5_3 d bWS v at Le kue bo RrO art sav Rie exbraMbkGesbabe kCubGi ai k/or CsuffCMGi b sav Rie for ai altsG. A Wére bWé 5_3 of a reRorbek resulb kCfers frov sbai kark 5_3 dbWS v at Le kue bo WGWv oGbure Mbi bei bdCsuffCMGi bsav Rie (rekuMek SeGWbev Rtotek) or v abrG CberfereiMe.

Ket : ci oi t v ous = 3efers bo sav Ries SWCWare i obsReMCCallt Rarbof bWS Sork orker Lubforv ek Rarbof bWé Qy RroMess lob
y c, Ouv Ler = y c, regGbrt i uv Ler frov kabaLase v aCbaCek Lt y Wév CMal c LsbraMs, erECMes. TWé y Wév CMal c LsbraMs, erECMe G a kCEGGi of bWé c v erCMai y Wév CMal, oMebt.
5_3 = 5Q CCof reRorbCg
3Pm = 3elabCEe PerMei bage mCferei Me
= Vi kCMabes faCek Qy

Laboratory Duplicate (DUP) Report

TWé qualCi Moi brol berv 5aLorabort muRICMabe refers bo a rai kov lt seleMek CbralaLorabort sRIC 5aLorabort kuRICMabes RroECke CforvabGi regarkCg v ebWok RreMSGi ai k sav Rie Wéberogei eCi. TWé Rerv Cbek rai ges for bWé 3elabCEe PerMei b meECabGi (3Pm) of 5aLorabort muRICMabes are sReMCCek C c5, DebWok QA VmO/l 6 ai k are keRei kei b oi bWé v agiCuke of resulbs C Mov RarGoi bo bWé leEel of reRorbCg: 3esulb < 10 bQ es 5_3: Oo 5Q C, 3esulbLebSeei 10 ai k NO bQ es 5_3: 0% 740%; 3esulb> NO bQ es 5_3: 0% 7NO%.

- **No L1f or1loru Dayric1le sDUP(Ret ant 1re re7aired lo f e reyorled0**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

TWé qualGi Moi brol berv DebWok / 5aLoratort Blai k refers to ai ai alt be free v abrQ to SWGW all reagei bs are akkek C bWé sav e Eoluv es or RroRortQi s as usek C sbai kark sav Rie RreRarabQi . TWé RurRose of bWS Qy Rarav eter G to v oi Qor Robei bGl laLoratort Moi bav CabQi . TWé qualGi Moi brol berv 5aLoratort y oi brol , av Rie (5y ,) refers to a MerbQek referei Me v aberQld or a ki oSi Cberferei Me free v abrQ sRQek SGW bargeb ai alt bes. TWé RurRose of bWS Qy Rarav eter G to v oi Qor v ebWok RreMSQi ai k aMMuraM CkeRei kei bof sav Rie v abrQ. mt i av CM3 eMbEert 5Q Gs are Lasek oi sbabSbMal eEaluabQi of RroMessek 5y , .

, uL7DabrQ: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP238A: Per)raoro1rkunSar)oBic Acidt sQCLol: b4x8mmx(								
nPNI 1X: PerfluoroLubai e sulfoi CMaMR (PFB,)	I p47pI 74	0.0N	µg/5	<0.0N	0.NNN µg/5	86.p	pN.0	1I 0
nPNI 1X: PerfluoroRei bai e sulfoi CMaMR (PFPe,)	Np067817 2	0.0N	µg/5	<0.0N	0.NI 4 µg/5	8N.8	p1.0	1Np
nPNI 1X: PerfluoroWéxai e sulfoi CMaMR (PFHx,)	I 447267 2	0.01	µg/5	<0.01	0.NN6 µg/5	80.N	66.0	1I 1
nPNI 1X: PerfluoroWéRbai e sulfoi CMaMR (PFHR,)	I p478N76	0.0N	µg/5	<0.0N	0.NI 6 µg/5	84.0	68.0	1I 2
nPNI 1X: PerfluorooMbai e sulfoi CMaMR (PF_,)	1p6I 7NI 71	0.01	µg/5	<0.01	0.NI N µg/5	8N.N	64.0	120
nPNI 1X: PerfluorokeMai e sulfoi CMaMR (PFm,)	I I 47pp71	0.0N	µg/5	<0.0N	0.N21 µg/5	6p.p	4I .0	12N
EP238- : Per)raoro1rkunC1rf oFuric Acidt sQCLol: b4x8mmx(								
nPNI 1X: PerfluoroLubai oCMaMR (PFBc)	I p47NN72	0.1	µg/5	<0.1	1.N4 µg/5	8p.N	pI .0	1N8
nPNI 1X: PerfluoroRei bai oCMaMR (PFPec)	Np067807	0.0N	µg/5	<0.0N	0.N4 µg/5	8N.2	pN.0	1N8
nPNI 1X: PerfluoroWéxai oCMaMR (PFHxc)	I 0p7N272	0.0N	µg/5	<0.0N	0.N4 µg/5	80.6	pN.0	1N8
nPNI 1X: PerfluoroWéRbai oCMaMR (PFHRc)	I p476478	0.0N	µg/5	<0.0N	0.N4 µg/5	8I .N	pN.0	1I 0
nPNI 1X: PerfluorooMbai oCMaMR (PF_c)	I I 476p71	0.01	µg/5	<0.01	0.N4 µg/5	8N.p	p1.0	1I I
nPNI 1X: Perfluoroi oi ai oCMaMR (PFOc)	I p478471	0.0N	µg/5	<0.0N	0.N4 µg/5	100	68.0	1I 0
nPNI 1X: PerfluorokeMai oCMaMR (PFmc)	I I 47p67N	0.0N	µg/5	<0.0N	0.N4 µg/5	82.6	p1.0	1N8
nPNI 1X: Perfluoroui keMai oCMaMR (PFUi mc)	N0467827 6	0.0N	µg/5	<0.0N	0.N4 µg/5	64.0	68.0	1I I
nPNI 1X: PerfluorokokeMai oCMaMR (PFmomc)	I 0p74471	0.0N	µg/5	<0.0N	0.N4 µg/5	10I	pN.0	1I 2
nPNI 1X: PerfluorobrQeMai oCMaMR (PFTrmc)	pN6N878276	0.0N	µg/5	<0.0N	0.N4 µg/5	68.6	64.0	122
nPNI 1X: PerfluorobebrakeMai oCMaMR (PFTemc)	I p67067p	0.04	µg/5	<0.04	0.6N4 µg/5	106	p1.0	1I N
EP238C: Per)raoro1rkunSar)oB1p idet sQCLol: b4x8mmx(								
nPNI 1X: PerfluorooMbai e sulfoi av Qe (F_, c)	p4278176	0.0N	µg/5	<0.0N	0.N4 µg/5	8I .I	6p.0	1I p
nPNI 1X: O7DebWI RerfluorooMbai e sulfoi av Qe (DeF_, c)	I 14067I N76	0.04	µg/5	<0.04	0.6N4 µg/5	1N8	66.0	121
nPNI 1X: O7nbWI RerfluorooMbai e sulfoi av Qe (nbF_, c)	21417407N	0.04	µg/5	<0.04	0.6N4 µg/5	104	p0.0	1I 0
nPNI 1X: O7DebWI RerfluorooMbai e sulfoi av QoebWai ol (DeF_, n)	N22267087p	0.04	µg/5	<0.04	0.6N4 µg/5	104	p0.0	1I 0
nPNI 1X: O7nbWI RerfluorooMbai e sulfoi av QoebWai ol (nbF_, n)	16817887N	0.04	µg/5	<0.04	0.6N4 µg/5	8N.1	p0.0	1I 0
nPNI 1X: O7DebWI RerfluorooMbai e sulfoi av QoaMebCMaMR (DeF_, cc)	NI 447I 178	0.0N	µg/5	<0.0N	0.N4 µg/5	110	64.0	1I 6
nPNI 1X: O7nbWI RerfluorooMbai e sulfoi av QoaMebCMaMR (nbF_, cc)	N8817407 6	0.0N	µg/5	<0.0N	0.N4 µg/5	86.I	61.0	1I 4
EP238D: sB:2(qraorolerop er Sar)oBic Acidt sQCLol: b4x8mmx(								
nPNI 1X: 2:N Fluorobelov er sulfoi CMaMR (2:NFT,)	p4p1N27pN72	0.04	µg/5	<0.04	0.NI 2 µg/5	86.I	6I .0	12I
nPNI 1X: 6:N Fluorobelov er sulfoi CMaMR (6:NFT,)	Np61878p7N	0.04	µg/5	<0.04	0.NI 6 µg/5	106	62.0	120
nPNI 1X: 6:N Fluorobelov er sulfoi CMaMR (6:NFT,)	I 81067I 272	0.04	µg/5	<0.04	0.N2 µg/5	10I	6p.0	1I 6

, uL7Dabr0: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP238D: sB:2(qmaorolerop er San)oBic Acidt sQCLol: b4x8mmx(. coBliBaed								
nPNI 1X: 10:N Fluorobelov er sulfoi 0MaMR (10:N FT,)	1N0NN676070	0.04	µg/5	<0.04	0.N2N µg/5	p6.N	p0.0	1I 0
EP238P: PqAS Sap t sQCLol: b4x8mmx(								
nPNI 1X: , uv of PFc,	7777	0.01	µg/5	<0.01	7777	7777	7777	7777
nPNI 1X: , uv of PFHx, ai k PF_,	I 447267 2/1p 6I 7NI 71	0.01	µg/5	<0.01	7777	7777	7777	7777
nPNI 1X: , uv of PFc, (A c mn3 5Gb)	7777	0.01	µg/5	<0.01	7777	7777	7777	7777

Matrix Spike (MS) Report

TWé qualGi Moi brol berv DabrQ: , RGe (D,) refers bo ai CbralaLorabort sRIC sav Rie sRGek SGW a reRresei babGEe seb of bargeb ai alt bes. TWé RurRose of bWS Qy Rarav eber G bo v oi Gbor Robei bGal v abrQ: effeMs oi ai alt be reMoEerGs. , babGM3 eMoEert 5G Gs as Rer laLorabort maba QualGi _ L9eMoEes (mQ_s). Vkeal reMoEert rai ges stabek v at Le SaGEek C bWé eEei bof sav Rie v abrQ: Cberferei Mé.

- **No M1IriF Syike sMS(or M1IriF Syike Dayric1le sMSD(Ret ant 1re re7aired lo f e reyorled0**

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Stantec Australia Pty Ltd (VIC)
Contact name:	[redacted]
Project name:	Not provided
Project ID:	VIC_0445_PFAS
Turnaround time:	5 Day
Date/Time received	Oct 17, 2022 12:00 PM
Eurofins reference	932350

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted]

Results will be delivered electronically via email to Abe Wright - abe.wright@cardno.com.au.

Note: A copy of these results will also be delivered to the general Stantec Australia Pty Ltd (VIC) email address.

Global Leader - Results you can trust

Stantec Australia Pty Ltd
Level 22, 570 Bourke Street
Melbourne
VIC 3000

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **932350-W**
Project name
Project ID VIC_0445_PFAS
Received Date Oct 17, 2022

Client Sample ID			0445_QC200_221010	0445_QC201_20221011	0445_QC202_20221012	0445_QC203_20221012
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M22-Oc0031817**	**M22-Oc0031818**	**M22-Oc0031819**	**M22-Oc0031820**
Date Sampled			**Oct 10, 2022**	**Oct 11, 2022**	**Oct 12, 2022**	**Oct 12, 2022**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.23	0.07	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.34	0.09	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.36	0.14	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.06	0.03	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	0.10	0.06	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.02	0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	128	128	97	72
13C5-PFPeA (surr.)	1	%	103	139	92	99
13C5-PFHxA (surr.)	1	%	108	117	98	88
13C4-PFHpA (surr.)	1	%	138	127	92	89
13C8-PFOA (surr.)	1	%	143	128	85	109
13C5-PFNA (surr.)	1	%	131	119	92	80
13C6-PFDA (surr.)	1	%	100	98	109	90
13C2-PFUnDA (surr.)	1	%	84	104	89	70
13C2-PFDoDA (surr.)	1	%	50	72	84	56
13C2-PFTeDA (surr.)	1	%	22	26	79	32
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	81	76	89	42
D3-N-MeFOSA (surr.)	1	%	18	31	91	13

Client Sample ID			0445_QC200_221010	0445_QC201_20221011	0445_QC202_20221012	0445_QC203_20221012
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-Oc0031817	M22-Oc0031818	M22-Oc0031819	M22-Oc0031820
Date Sampled			Oct 10, 2022	Oct 11, 2022	Oct 12, 2022	Oct 12, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	15	28	95	12
D7-N-MeFOSE (surr.)	1	%	31	37	86	16
D9-N-EtFOSE (surr.)	1	%	25	33	85	15
D5-N-EtFOSAA (surr.)	1	%	45	59	92	93
D3-N-MeFOSAA (surr.)	1	%	74	81	93	59
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.07	0.04	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.03	0.02	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.06	0.03	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	1.2	0.65	0.02	0.06
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	0.04	0.04	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	1.2	1.7	0.07	0.22
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	135	147	97	95
18O2-PFHxS (surr.)	1	%	148	127	94	94
13C8-PFOS (surr.)	1	%	118	110	99	86
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	130	167	96	72
13C2-6:2 FTSA (surr.)	1	%	145	146	82	71
13C2-8:2 FTSA (surr.)	1	%	94	84	88	103
13C2-10:2 FTSA (surr.)	1	%	68	86	98	76
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	2.4	2.35	0.09	0.28
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	1.3	1.76	0.07	0.22
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	2.5	2.41	0.09	0.28
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	3.56	2.78	0.09	0.28
Sum of PFASs (n=30)*	0.1	ug/L	3.71	2.88	< 0.1	0.28

Client Sample ID			0445_QC204_20221012	0445_QC205_20221012	0445_QC206_20221014	0445_QC207_20221014
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-Oc0031821	M22-Oc0031822	M22-Oc0031823	M22-Oc0031824
Date Sampled			Oct 12, 2022	Oct 12, 2022	Oct 14, 2022	Oct 14, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.06	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.02	0.14	0.04
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	0.09	0.30	0.12
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	[N09]0.04	[N09]0.11	[N09]0.02
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	[N09]0.10	[N09]0.25	[N09]0.04
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.07	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.09	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.03	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	64	109	91	36
13C5-PFPeA (surr.)	1	%	57	132	105	97
13C5-PFHxA (surr.)	1	%	59	121	102	60
13C4-PFHpA (surr.)	1	%	64	126	102	58
13C8-PFOA (surr.)	1	%	59	132	102	58
13C5-PFNA (surr.)	1	%	65	127	102	35
13C6-PFDA (surr.)	1	%	66	119	91	27
13C2-PFUnDA (surr.)	1	%	59	121	79	16
13C2-PFDoDA (surr.)	1	%	49	152	75	13
13C2-PFTeDA (surr.)	1	%	27	110	50	101
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	66	148	78	31
D3-N-MeFOSA (surr.)	1	%	75	49	30	12
D5-N-EtFOSA (surr.)	1	%	91	41	24	47
D7-N-MeFOSE (surr.)	1	%	40	85	54	11
D9-N-EtFOSE (surr.)	1	%	44	88	53	11
D5-N-EtFOSAA (surr.)	1	%	59	151	78	18
D3-N-MeFOSAA (surr.)	1	%	57	145	83	21
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	0.12	0.07	0.03
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.13	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	0.01	0.02	0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	0.12	0.07	0.03
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.57	0.80	0.22
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	0.04	0.15	0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	0.02	0.84	6.8	0.81
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.08	< 0.01

Client Sample ID			0445_QC204_20221012	0445_QC205_20221012	0445_QC206_20221014	0445_QC207_20221014
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-Oc0031821	M22-Oc0031822	M22-Oc0031823	M22-Oc0031824
Date Sampled			Oct 12, 2022	Oct 12, 2022	Oct 14, 2022	Oct 14, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	63	127	103	103
18O2-PFHxS (surr.)	1	%	64	127	102	60
13C8-PFOS (surr.)	1	%	65	138	96	51
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.33	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.58	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.04	< 0.01
13C2-4:2 FTSA (surr.)	1	%	61	153	148	49
13C2-6:2 FTSA (surr.)	1	%	62	141	121	38
13C2-8:2 FTSA (surr.)	1	%	82	199	126	36
13C2-10:2 FTSA (surr.)	1	%	57	103	85	13
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.02	1.41	7.6	1.03
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.02	0.94	7.05	0.85
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.02	1.51	7.85	1.07
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	1.78	9.44	1.28
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	1.95	10.12	1.33

Client Sample ID			0445_QC208_20221014	0445_QC209_20221015	0906_QC500_20221015
Sample Matrix			Water	Water	Water
Eurofins Sample No.			M22-Oc0031825	M22-Oc0031826	M22-Oc0031827
Date Sampled			Oct 14, 2022	Oct 15, 2022	Oct 15, 2022
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.05	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.09	0.02	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.04	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.06	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.03	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	0.02	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	93	93	85
13C5-PFPeA (surr.)	1	%	100	86	88
13C5-PFHxA (surr.)	1	%	103	95	84
13C4-PFHpA (surr.)	1	%	108	110	91
13C8-PFOA (surr.)	1	%	118	117	98
13C5-PFNA (surr.)	1	%	101	112	90
13C6-PFDA (surr.)	1	%	75	94	95

Client Sample ID			0445_QC208_20221014	0445_QC209_20221015	0906_QC500_20221015
Sample Matrix			Water	Water	Water
Eurofins Sample No.			M22-Oc0031825	M22-Oc0031826	M22-Oc0031827
Date Sampled			Oct 14, 2022	Oct 15, 2022	Oct 15, 2022
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
13C2-PFUnDA (surr.)	1	%	68	61	74
13C2-PFDoDA (surr.)	1	%	59	43	79
13C2-PFTeDA (surr.)	1	%	27	20	56
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	86	91	89
D3-N-MeFOSA (surr.)	1	%	22	22	30
D5-N-EtFOSA (surr.)	1	%	18	19	27
D7-N-MeFOSE (surr.)	1	%	36	34	63
D9-N-EtFOSE (surr.)	1	%	33	31	67
D5-N-EtFOSAA (surr.)	1	%	70	64	82
D3-N-MeFOSAA (surr.)	1	%	74	71	84
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.03	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.03	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.29	0.08	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	0.02	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	1.3	0.19	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	99	97	91
18O2-PFHxS (surr.)	1	%	110	112	100
13C8-PFOS (surr.)	1	%	86	94	88
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	0.03	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	108	158	73
13C2-6:2 FTSA (surr.)	1	%	113	157	75
13C2-8:2 FTSA (surr.)	1	%	93	134	94
13C2-10:2 FTSA (surr.)	1	%	86	48	81

Client Sample ID			0445_QC208_20221014	0445_QC209_20221015	0906_QC500_20221015
Sample Matrix			Water	Water	Water
Eurofins Sample No.			M22-Oc0031825	M22-Oc0031826	M22-Oc0031827
Date Sampled			Oct 14, 2022	Oct 15, 2022	Oct 15, 2022
Test/Reference	LOR	Unit			
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	1.59	0.27	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	1.36	0.19	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	1.65	0.27	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	1.94	0.29	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	2.05	0.29	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Oct 18, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Oct 18, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Oct 18, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Oct 18, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Oct 17, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:
Project ID: VIC_0445_PFAS

Order No.:
Report #: 932350
Phone:
Fax:

Received: Oct 17, 2022 12:00 PM
Due: Oct 24, 2022
Priority: 5 Day
Contact Name: Abe Wright

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC200_221010	Oct 10, 2022		Water	M22-Oc0031817	X
2	0445_QC201_20221011	Oct 11, 2022		Water	M22-Oc0031818	X
3	0445_QC202_20221012	Oct 12, 2022		Water	M22-Oc0031819	X
4	0445_QC203_20221012	Oct 12, 2022		Water	M22-Oc0031820	X
5	0445_QC204_20221012	Oct 12, 2022		Water	M22-Oc0031821	X
6	0445_QC205_20221012	Oct 12, 2022		Water	M22-Oc0031822	X
7	0445_QC206_20221014	Oct 14, 2022		Water	M22-Oc0031823	X
8	0445_QC207_20221014	Oct 14, 2022		Water	M22-Oc0031824	X

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:
Project ID: VIC_0445_PFAS

Order No.:
Report #: 932350
Phone:
Fax:

Received: Oct 17, 2022 12:00 PM
Due: Oct 24, 2022
Priority: 5 Day
Contact Name: Abe Wright

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
9	0445_QC208_20221014	Oct 14, 2022		Water	M22-Oc0031825	X
10	0445_QC209_20221015	Oct 15, 2022		Water	M22-Oc0031826	X
11	0906_QC500_20221015	Oct 15, 2022		Water	M22-Oc0031827	X
Test Counts						11

Date Reported:Oct 21, 2022

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	98			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	100			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	98			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	104			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	103			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	104			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	109			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	117			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	82			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	112			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	97			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	109			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	111			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	101			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	104			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	97			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	104			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	100			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	93			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	92			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	101			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	99			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	99			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	84			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	135			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	107			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	97			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M22-Oc0031564	NCP	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M22-Oc0031564	NCP	%	117			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M22-Oc0031564	NCP	%	124			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-Oc0031564	NCP	%	104			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M22-Oc0031564	NCP	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	M22-Oc0031564	NCP	%	98			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M22-Oc0031564	NCP	%	71			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-Oc0031564	NCP	%	75			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-Oc0031564	NCP	%	93			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-Oc0031564	NCP	%	94			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-Oc0031564	NCP	%	124			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M22-Oc0031564	NCP	%	86			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-Oc0031564	NCP	%	130			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-Oc0031564	NCP	%	88			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M22-Oc0031564	NCP	%	96			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M22-Oc0031564	NCP	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-Oc0031564	NCP	%	102			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-Oc0031564	NCP	%	111			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M22-Oc0031564	NCP	%	116			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-Oc0031564	NCP	%	102			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-Oc0031564	NCP	%	93			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-Oc0031564	NCP	%	100			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-Oc0031564	NCP	%	99			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-Oc0031564	NCP	%	125			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-Oc0031564	NCP	%	136			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-Oc0031564	NCP	%	85			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-Oc0031564	NCP	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M22-Oc0031564	NCP	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-Oc0031564	NCP	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-Oc0031564	NCP	%	126			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M22-Oc0031817	CP	ug/L	0.23	0.23	1.4	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M22-Oc0031817	CP	ug/L	0.34	0.35	4.6	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M22-Oc0031817	CP	ug/L	0.36	0.36	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-Oc0031817	CP	ug/L	0.06	0.06	3.6	30%	Pass	
Perfluorooctanoic acid (PFOA)	M22-Oc0031817	CP	ug/L	0.10	0.09	3.9	30%	Pass	
Perfluorononanoic acid (PFNA)	M22-Oc0031817	CP	ug/L	0.02	0.02	6.0	30%	Pass	
Perfluorodecanoic acid (PFDA)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M22-Oc0031817	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-Oc0031817	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-Oc0031817	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M22-Oc0031817	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M22-Oc0031817	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-Oc0031817	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-Oc0031817	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M22-Oc0031817	CP	ug/L	0.07	0.07	1.2	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-Oc0031817	CP	ug/L	0.03	0.03	7.2	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-Oc0031817	CP	ug/L	0.06	0.06	1.1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-Oc0031817	CP	ug/L	1.2	1.2	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-Oc0031817	CP	ug/L	0.04	0.05	2.7	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-Oc0031817	CP	ug/L	1.2	1.2	1.2	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M22-Oc0031817	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-Oc0031817	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS



[redacted]
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Stantec Australia Pty Ltd (VIC)
Address: [redacted]

Order No.:
Report #: 932350
Phone:
Fax:

Received: Oct 17, 2022 12:00 PM
Due: Oct 24, 2022
Priority: 5 Day
Contact Name: [redacted]

Project Name:
Project ID: VIC_0445_PFAS

Eurofins Analytical Services Manager [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC200_221010	Oct 10, 2022		Water	M22-Oc0031817	X
2	0445_QC201_20221011	Oct 11, 2022		Water	M22-Oc0031818	X
3	0445_QC202_20221012	Oct 12, 2022		Water	M22-Oc0031819	X
4	0445_QC203_20221012	Oct 12, 2022		Water	M22-Oc0031820	X
5	0445_QC204_20221012	Oct 12, 2022		Water	M22-Oc0031821	X
6	0445_QC205_20221012	Oct 12, 2022		Water	M22-Oc0031822	X
7	0445_QC206_20221014	Oct 14, 2022		Water	M22-Oc0031823	X
8	0445_QC207_20221014	Oct 14, 2022		Water	M22-Oc0031824	X

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Stantec Australia Pty Ltd (VIC)
Address: [redacted]

Order No.:
Report #: 932350
Phone:
Fax:

Received: Oct 17, 2022 12:00 PM
Due: Oct 24, 2022
Priority: 5 Day
Contact Name: [redacted]

Project Name:
Project ID: VIC_0445_PFAS

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
9	0445_QC208_20221014	Oct 14, 2022		Water	M22-Oc0031825	X
10	0445_QC209_20221015	Oct 15, 2022		Water	M22-Oc0031826	X
11	0906_QC500_20221015	Oct 15, 2022		Water	M22-Oc0031827	X
Test Counts						11

Cardno

Chain of Custody

Sheet 1 of 1

PM Name: Abe Wright

Phone [redacted]

Address: [redacted]

PM Email: [redacted]

Project Number: VIC_0445_PFASOMP
Order Number: DEF19008
Site ID: Bandiana - P02
Laboratory (name, phone,fax no & contact person) : **Eurofins**

Sample ID	Laboratory ID	Container	Sampling		Sample Matrix					Sample preservation				Analysis										
			Date	Time	Water	Soil				Ice				PFAS Full Suite										HOLD
0445_QC210_221110		2x20ml PFAS	10/11/2022		X					X				X										

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples.

Sampler name: (print and signature)
Maya Brennan

Date: 10/11/2022

Relinquished by (Sampler): (print and signature)	Date	Time	Received by (Courier/Lab): (print and signature)	Date	Time
[redacted]	11/11/2022				

Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time

Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date			Time

Please supply results electronically in spreadsheet and ESDAT files.

Turn around time: 5 Days

Please circle

#AU_CAU001_EnviroSampleVic

From: [redacted]
Sent: Tuesday, 15 November 2022 1:40 PM
To: [redacted] #AU_CAU001_EnviroSampleVic
Subject: RE: Eurofins Sample Receipt Advice - Report 940511 : Site NSW_0315_PFASOMP
Attachments: 0445 Bandiana COC - Eurofins.pdf

Follow Up Flag: Follow up
Flag Status: Completed

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.
Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

[redacted]

This sample is for the COC sent Friday. See attached again.

Regards,

[redacted]

Stantec Australia
[redacted]

Cardno now Stantec

Stantec acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures and to Elders past and present.

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

Please consider the environment before printing this email.

From: [redacted]
Sent: Tuesday, 15 November 2022 10:50 AM
To [redacted]
Subject: RE: Eurofins Sample Receipt Advice - Report 940511 : Site NSW_0315_PFASOMP

[redacted]
Thanks for the clarification here.

Stantec Australia Pty Ltd
Level 22, 570 Bourke Street
Melbourne
VIC 3000

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **941104-W**
Project name
Received Date Nov 11, 2022

Client Sample ID			**0445_QC210_221110**
Sample Matrix			**Water**
Eurofins Sample No.			**M22-No0030234**
Date Sampled			**Nov 10, 2022**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	83
13C5-PFPeA (surr.)	1	%	89
13C5-PFHxA (surr.)	1	%	94
13C4-PFHpA (surr.)	1	%	92
13C8-PFOA (surr.)	1	%	87
13C5-PFNA (surr.)	1	%	90
13C6-PFDA (surr.)	1	%	91
13C2-PFUnDA (surr.)	1	%	85
13C2-PFDoDA (surr.)	1	%	87
13C2-PFTeDA (surr.)	1	%	69
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	89
D3-N-MeFOSA (surr.)	1	%	129
D5-N-EtFOSA (surr.)	1	%	116

Client Sample ID			0445_QC210_221110
Sample Matrix			Water
Eurofins Sample No.			M22-No0030234
Date Sampled			Nov 10, 2022
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D7-N-MeFOSE (surr.)	1	%	100
D9-N-EtFOSE (surr.)	1	%	105
D5-N-EtFOSAA (surr.)	1	%	83
D3-N-MeFOSAA (surr.)	1	%	77
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.10
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.05
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	85
18O2-PFHxS (surr.)	1	%	87
13C8-PFOS (surr.)	1	%	87
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	84
13C2-6:2 FTSA (surr.)	1	%	72
13C2-8:2 FTSA (surr.)	1	%	85
13C2-10:2 FTSA (surr.)	1	%	81
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	0.15
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.05
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.15
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.15
Sum of PFASs (n=30)*	0.1	ug/L	0.15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Nov 17, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Nov 17, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Nov 17, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Nov 17, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Nov 15, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	4/52 Industrial Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield East NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	PO Box 60 Wickham 2293
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	Tel: +61 2 4968 8448
NATA# 1261 Site# 1254	NATA# 1261 Site# 1254	NATA# 1261 Site# 18217		NATA# 1261 Site# 20794	NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:

Order No.:
Report #: 941104
Phone:
Fax:

Received: Nov 11, 2022 4:00 PM
Due: Nov 22, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC210_221110	Nov 10, 2022		Water	M22-No0030234	X
Test Counts						1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	76			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	74			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	73			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	84			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	81			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	73			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	87			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	130			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	66			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	79			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	93			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	68			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	69			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	82			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	80			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	92			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	66			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	80			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	69			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	81			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	77			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	101			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	68			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	67			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	65			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	80			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	71			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M22-No0034538	NCP	%	119			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M22-No0034538	NCP	%	61			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M22-No0034538	NCP	%	72			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-No0034538	NCP	%	71			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M22-No0034538	NCP	%	76			50-150	Pass	
Perfluorononanoic acid (PFNA)	M22-No0034538	NCP	%	77			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M22-No0034538	NCP	%	67			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-No0034538	NCP	%	83			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-No0034538	NCP	%	78			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-No0034538	NCP	%	74			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-No0034538	NCP	%	84			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M22-No0034538	NCP	%	72			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-No0034538	NCP	%	76			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-No0034538	NCP	%	60			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M22-No0034538	NCP	%	60			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M22-No0034538	NCP	%	77			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-No0034538	NCP	%	72			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-No0034538	NCP	%	67			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M22-No0034538	NCP	%	60			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-No0034538	NCP	%	79			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-No0034538	NCP	%	65			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-No0034538	NCP	%	79			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-No0034538	NCP	%	67			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-No0034538	NCP	%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-No0034538	NCP	%	63			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-No0034538	NCP	%	72			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-No0034538	NCP	%	64			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M22-No0034538	NCP	%	66			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-No0034538	NCP	%	71			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-No0034538	NCP	%	74			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M22-No0039418	NCP	ug/L	0.01	0.01	2.1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M22-No0039418	NCP	ug/L	0.02	0.02	3.1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M22-No0039418	NCP	ug/L	0.02	0.02	2.0	30%	Pass	
Perfluorodecanoic acid (PFDA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-No0039418	NCP	ug/L	0.04	0.04	3.6	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-No0039418	NCP	ug/L	0.08	0.08	9.1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M22-No0039418	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-No0039418	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager

[redacted]

[redacted]

General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

APPENDIX

D

FIELD RECORDS & CALIBRATION CERTIFICATES

Groundwater Field Data Records

Location	Property	Easting	Northing	Monitoring Date	DSI Bore Depth (m)	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Other Observations on Bore/Site	Sampling Method	Temp (C°)	DO (mg/L)	EC (us/Cm)	TDS	pH	Eh (mV)
MW009	East BMA	495603.37	5999848.02	13/10/22	11.6	12.38	166.28	6.263	160.017	Clear, low turbidity	HydraSleeve®	17.4	4.32	331.1	215.215	6.3	154.5
MW012	East BMA	495534.14	5999634.04	13/10/22	159.82	10.65	167.36	6.909	160.451	Cloudy, low turbidity	HydraSleeve®	18.2	5.52	301.1	195.715	6.32	59.5
MW016	East BMA	495641.49	5999946.12	13/10/22	158.38	10.84	166.16	6.459	159.701	Clear, low turbidity	HydraSleeve®	17.7	2.82	367	238.55	6.46	170.8
MW018	East BMA	495834.70	5999717.39	13/10/22	9.27	10.52	165.43	5.695	159.735	Clear, low turbidity	HydraSleeve®	16.7	3.74	721	468.65	6.46	170.8
MW020	East BMA	495826.29	5999801.50	12/10/22	8.5	7.15	165.41	5.915	159.495	Clear, low turbidity	HydraSleeve®	15.8	1.98	370.1	240.565	6.32	57.1
MW029	East BMA	495426.45	5999463.69	13/10/22	10	11.22	168.11	7.038	161.072	Cloudy, low turbidity	HydraSleeve®	17.6	5.23	166.1	107.965	5.65	70.6
MW034	East BMA	495753.66	5999858.29	13/10/22	9.9	11.3	166.63	7.128	159.502	Clear, low turbidity	HydraSleeve®	16.9	2.2	258.7	168.155	6.2	84.4
MW035	East BMA	495683.72	5999911.25	13/10/22	10.3	11.45	166.22	6.629	159.591	Clear, low turbidity	HydraSleeve®	17.3	2.43	315.6	205.14	6.07	145.2
MW042	East BMA	495677.04	5999879.86	13/10/22	17	18.51	166.62	6.852	159.768	Clear, low turbidity	HydraSleeve®	17.8	0.88	302.8	196.82	5.96	142.5
MW043	East BMA	495680.27	5999879.94	13/10/22	12.3	13.53	166.55	6.772	159.778	Clear, low turbidity	HydraSleeve®	17.2	2.35	280.3	182.195	6.07	131.7
MW046_D	East BMA	495752.45	5999855.99	12/10/22	21	22.5	166.49	7.549	158.941	Clear, low turbidity	HydraSleeve®	17.2	1.65	335.5	218.075	6.08	185.7
MW046_I	East BMA	495752.45	5999855.99	12/10/22	13.4	13.2	166.48	6.974	159.506	Clear, low turbidity	HydraSleeve®	17.6	2.26	333.7	216.905	6.03	155.1
MW051	South BMA	492170.29	5999844.58	11/10/22	NM	NM	188.02	25.492	162.528	Clear, low turbidity	HydraSleeve®	18.7	2.11	3201	2080.65	6.07	5.5
MW052	East BMA	495251.08	5999549.74	13/10/22	11.06	9.66	168.49	6.543	161.947	Cloudy, low turbidity. * Potentially anomalous EC result.	HydraSleeve®	16.6	1.3	85.6	55.64	5.58	91.4
MW056	South BMA	492586.19	5999891.19	11/10/22	NM	3.73	168.49	1.609	166.881	Brown high turbidity	HydraSleeve®	18.5	5.65	284.2	184.73	6.91	-2.9
MW304	South BMA	491289.32	6000521.98	101/10/22	21.78	18.95	176.131	15.978	160.153	Clear, low turbidity	HydraSleeve®	18.9	2.02	13433	8731.45	6.56	-20.2
MW307	South BMA	491307.09	6000261.17	141/10/22	27.37	28	181.086	19.889	161.197	Clear, low turbidity	HydraSleeve®	19.3	1.69	4965	3227.25	6.45	60.2
MW311	South BMA	491514.62	6000214.45	101/10/22	22.71	23.3	182.452	20.406	162.046	Cloudy, low turbidity	HydraSleeve®	19.2	2.89	11019	7162.35	6.27	51.1
MW312	South BMA	491682.00	6000520.00	101/10/22	17.64	16.15	175.841	11.521	164.320	Cloudy	HydraSleeve®	18.9	2.46	4519	2937.35	7.04	-18.4
MW313	Offsite	491109.26	5999857.37	141/10/22	33.89	NM	193.128	Data Lost	-	Gauging data lost due to software malfunction	HydraSleeve®	18.8	0.57	1064	691.6	6.62	-14.2
MW315	South BMA	491244.00	5999661.00	12/10/22	41.75	27.37	204.875	Dry	-	Well Dry	-	-	-	-	-	-	-
MW317	South BMA	491231.00	5999650.00	12/10/22	38.93	-	204.364	Dry	-	Well Dry	-	-	-	-	-	-	-
MW318	South BMA	491261.00	5999655.00	12/10/22	40.87	40	205.965	Dry	-	Well Dry	-	-	-	-	-	-	-
MW319	South BMA	491998.00	5999572.00	11/10/22	41.789	NM	199.524	Data Lost	-	Gauging data lost due to software malfunction	HydraSleeve®	18.4	1.85	884	574.6	6.49	-23.4
MW321	South BMA	492074.00	5999548.00	11/10/22	38.969	NM	199.524	Data Lost	-	Gauging data lost due to software malfunction. * Potentially anomalous EC result.	HydraSleeve®	18	8.84	23.4	15.21	7.29	71.3
MW323	South BMA	492076.00	6000078.00	11/10/22	22.84	23.1	184.472	19.543	164.929	Cloudy, low turbidity	HydraSleeve®	19.1	14.9	6180	4017	5.57	85.3
MW325	South BMA	492150.00	5999904.00	11/10/22	NM	NM	187.901	24.36	163.541	Cloudy, low turbidity	HydraSleeve®	16.2	3.06	9087	5906.55	6.79	-26.2
MW328	South BMA	492272.00	5999811.00	14/10/22	31.03	NM	189.747	25.482	164.265	Clear, low turbidity	HydraSleeve®	18.5	7.39	510.1	331.565	6.68	267.3
MW329	South BMA	492199.00	6000242.00	11/10/22	19.649	19.51	181.435	13.351	168.084	Clear, low turbidity	HydraSleeve®	18.2	4.8	1829	1188.85	7.6	-12
MW342	North BMA	493664.00	6000189.00	15/10/22	17.42	17.64	180.605	13.699	166.906	Clear, low turbidity	HydraSleeve®	17.2	4.77	1054	685.1	10.39	-38.4
MW345	North BMA	494560.00	5999979.00	14/10/22	7.48	5.5	168.316	3.846	164.470	Clear, low turbidity	HydraSleeve®	18.2	1.44	4763	3095.95	5.9	101.9
MW346	North BMA	494621.00	6000250.00	11/10/22	9.8	8.72	166.944	1.899	165.045	Clear, low turbidity	HydraSleeve®	15.9	2.71	2100	1365	6.43	241.7
MW350_D	East BMA	495299.30	5999571.30	13/10/22	NM	20.61	168.229	6.751	161.478	Cloudy, low turbidity	HydraSleeve®	16	22.4	237.3	154.245	6.26	227.8

Location	Property	Easting	Northing	Monitoring Date	DSI Bore Depth (m)	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Other Observations on Bore/Site	Sampling Method	Temp (C^0)	DO (mg/L)	EC (us/Cm)	TDS	pH	Eh (mV)
MW350_S	East BMA	495299.30	5999571.30	13/10/22	NM	10.12	168.233	6.745	161.488	Cloudy, low turbidity	HydraSleeve®	17.1	5.95	392.1	254.865	6.01	191.5
MW351	East BMA	495382.00	6000184.00	13/10/22	NM	9	164.79	4.516	160.274	Brown high turbidity	HydraSleeve®	15.8	2.52	148.1	96.265	5.91	125.5
MW352	East BMA	495498.59	6000070.77	13/10/22	NM	9.93	164.493	4.618	159.875	Clear, low turbidity	HydraSleeve®	16.9	1.72	167.9	109.135	6.23	128.2
MW353	East BMA	495479.00	5999808.00	13/10/22	NM	11.13	166.625	6.917	159.708	Brown high turbidity	HydraSleeve®	19.5	1.54	531.6	345.54	5.77	172.5
MW354	East BMA	495767.20	5999625.80	13/10/22	NM	11.13	166.625	6.917	159.708	Brown high turbidity	HydraSleeve®	19.5	1.54	531.6	345.54	5.77	172.5
MW356	Offsite	496059.80	6000518.40	-	NM	-	-	-	-	Well not gauged or sampled, inaccessible due to flooding	-	-	-	-	-	-	-
MW357	Offsite	495793.41	6001682.22	12/10/22	NM	6.3	156.243	1.277	154.966	Brown high turbidity	HydraSleeve®	15.4	1.07	112.3	72.995	5.43	-9.8
MW360	Offsite	490936.64	6001498.75	14/10/22	NM	13.7	164.89	6.911	157.979	Clear, low turbidity	HydraSleeve®	18.2	3.46	705	458.25	7.52	149.6
MW361	Offsite	490943.84	6003056.80	14/10/22	NM	6.3	153.716	1.545	152.171	Brown high turbidity	HydraSleeve®	13.9	3.76	184.3	119.795	6.36	167.1
MW403	Offsite	495312.20	5999591.49	13/10/22	9.98	10.1	166.926	5.525	161.401	Cloudy, low turbidity	HydraSleeve®	18	3.58	279.1	181.415	5.84	122.3
MW404	Offsite	495269.66	5999632.70	13/10/22	10.03	10.15	166.617	5.524	161.093	Clear, low turbidity	HydraSleeve®	19.1	1.44	324.4	210.86	5.98	105.2
OTH019	Offsite	-	-	10/11/22	-	-	-	-	-	Sampled from tap. Tap run for 1 minute prior to sampling.	Tap	18.9	2.58	342.8	222.82	6.21	122.3

Notes to table:NM: Not Measured* Potentially anomalous result due possible equipment fault

Surface Water Field Data Records

Location ID	Property	Easting	Northing	Monitoring Date	Water body depth (m)	Sample Depth (m)	Flow Rate	Water Colour	Turbidity	Other Observations	Temp (Co)	DO (mg/L)	EC (us/Cm)	TDS (mg/L)	pH	Eh (mV)
SW302	On-base	491217.00	5999668.00	15/10/2022	-	-	-	-	-	Dry	-	-	-	-	-	-
SW307	On-base	491296.00	5999663.00	14/10/2022	0.15	0.05	Low	Clear	Low		13.9	8.28	29.7	19.305	6.64	151.4
SW310	On-base	491245.00	6000071.00	10/10/2022	0.20	0.10	Low	Brown	Low	Very low creek flow	16.2	7.1	247.7	161.005	7.19	139.1
SW311	On-base	491280.00	6000430.00	10/10/2022	0.10	0.10	Medium	Cloudy	Medium	Very low creek flow	18.6	1.37	353.6	229.84	6.56	-98.7
SW313	On-base	491321.00	6000251.00	10/10/2022	0.30	0.10	Low	Brown	Low	Small dam	23	5.04	68.5	44.525	6.37	55.2
SW316	On-base	491421.00	6000456.00	10/10/2022	0.20	0.20	Medium	-	Medium	No flow out of the culvert	17.4	7.53	90.6	58.89	6.84	55.2
SW321	On-base	491612.00	6000381.00	10/10/2022	0.20	0.10	Medium	Brown	Low	Low creek flow	21.5	5.96	115.1	74.815	7.3	179.5
SW322	On-base	491706.00	6000527.00	10/10/2022	0.20	0.10	Medium	Brown	Low	-	21.3	6.26	103.8	67.47	7.33	189.1
SW323	On-base	491860.00	6000478.00	10/10/2022	0.5	0.10	Low	Brown	Medium	-	22.7	9.56	110.5	71.825	8.68	158.9
SW324	On-base	491976.00	6000279.00	10/10/2022	0.30	0.15	Medium	Brown	Medium		19.2	7.09	187.9	122.135	7.88	24
SW326	On-base	491968.00	5999998.00	14/10/2022	0.20	0.10	Medium	Brown	Low	-	17.8	8.09	89	57.85	7.24	221.2
SW332	On-base	492126.00	6000156.00	14/10/2022	0.15	0.10	Medium	Cloudy	Low	-	19.5	7.96	79.5	51.675	7.56	209.5
SW333	On-base	492177.00	6000246.00	14/10/2022	0.40	0.30	Medium	Brown	Medium	-	18.3	6.93	64.7	42.055	7.46	95.2
SW336	On-base	492186.00	5999832.00	14/10/2022	1.50	0.20	Low	Green	Medium	-	15	8.04	37.1	24.115	6.29	251.9
SW338	On-base	492273.00	6000114.00	14/10/2022	1.20	0.20	Low	Clear	Low	-	17	6.55	195.6	127.14	7.67	65.6
SW340	On-base	492352.00	6000181.00	14/10/2022	0.40	0.30	Medium	Cloudy	Medium	-	14.6	5.37	89.3	58.045	6.57	122.3
SW346	On-base	492606.00	6000048.00	14/10/2022	0.30	0.10	Medium	Cloudy	Low	-	16.7	6.29	70.2	45.63	6.74	197.7
SW349	On-base	492827.00	5999999.00	14/10/2022	1.20	0.30	Low	Brown	Low	-	17.1	4.81	85.2	55.38	8.31	32.2
SW355	On-base	492997.00	5999947.00	14/10/2022	1.20	0.30	Low	Brown	Low	-	15.8	5.88	47.3	30.745	6.95	80.1
SW370	On-base	494029.00	5999774.00	15/10/2022	0.50	0.20	High	Cloudy	Low	-	13.9	7.64	92.1	59.865	8.59	43.3
SW374	On-base	494552.00	6000001.00	15/10/2022	0.80	0.20	Medium	Brown	Medium	-	14.6	6.62	77.1	50.115	7.69	53
SW375	On-base	494650.00	6000239.00	12/10/2022	0.30	0.10	Low	Brown	Medium	-	15.8	6.18	179.8	116.87	7.02	192.1
SW379	On-base	495222.00	5999565.00	14/10/2022	0.20	0.10	Low	Brown	Low		13	5.63	40.2	26.13	6.65	210.7
SW380	On-base	495340.00	5999652.00	14/10/2022	0.30	0.20	High	Cloudy	Low	-	12.7	8.15	16.9	10.985	7.63	96.5
SW382	On-base	495424.00	6000092.00	13/10/2022	1.00	0.20	Low	Clear	Low	-	17	5.12	22.5	14.625	7.67	102.7
SW387	On-base	496084.00	5999677.00	12/10/2022	0.30	0.20	High	Cloudy	Low	-	15.3	7.65	231.2	150.28	6.84	2.6

SW388	On-base	496272.00	5999749.00	12/10/2022	0.20	0.10	Medium	Cloudy	Medium	-	14.8	1.94	84.3	54.795	5.46	18.3
SW390	Off-base	497942.00	5998177.00	11/10/2022	2.50	0.20	High	Clear	Low	-	13.7	8.63	511	332.15	8.09	43.4
SW393	Off-base	496236.00	5999368.00	10/11/2022	1.00	0.10	Medium	Cloudy	Medium	No odour, brown, sampled week later due to flooding in the area	20.5	4.74	161.1	104.715	7.04	158.9
SW395	Off-base	496191.00	5999895.00	10/11/2022	1.00	0.10	Low	Cloudy	Medium	Stagnant, algae around the edge, sampled week later due to flooding in the area	19.6	6.11	138.4	89.96	6.42	188.2
SW396	Off-base	-	-	12/10/2022	0.50	0.10	Low	Brown	Medium	Algae present	19.4	12.46	452.7	294.255	8.14	169.9
SW397	Off-base	-	-	12/10/2022	2.50	0.20	Medium	Green	Medium	-	18.2	6.68	319.4	207.61	7.07	16.7
SW398	Off-base	496369.00	6000178.00	12/10/2022	0.50	0.10	Low	Brown	Low	High water level, unable to sample from original sampling point	16.6	16.6	83.8	54.47	6.22	189.7
SW400	Off-base	-	-	12/10/2022	0.50	0.10	Low	Brown	Low	-	17.6	5.11	166.1	107.965	6.61	192.1
SW401	Off-base	-	-	12/10/2022	1.00	0.20	Medium	Cloudy	Medium	-	19.2	3.72	536	348.4	6.91	-59.6
SW403	Off-base	495794.00	6000721.00	15/10/2022	0.80	0.20	Medium	Green	Medium	-	14.5	3.2	67.6	43.94	6.66	124.5
SW404	Off-base	495932.00	6000777.00	15/10/2022	2.50	0.30	High	Brown	Medium	-	13.9	7.53	61.2	39.78	6.96	91.2
SW405	Off-base	495713.70	6000917.23	15/10/2022	1.00	0.30	Medium	Brown	Medium	-	15.2	4.74	66.7	43.355	6.61	86.8
SW409	Off-base	495342.00	6000744.00	15/10/2022	0.30	0.10	Medium	Brown	Low	-	15.4	7.81	92.1	59.865	7.14	152.2
SW412	Off-base	495462.23	6001117.47	15/10/2022	0.50	0.10	Low	Brown	Low	-	16.9	7.56	181.1	117.715	7.18	130
SW416	Off-base	495852.00	6001776.00	12/10/2022	1.00	0.10	High	Brown	Low	-	13.1	11.08	37	24.05	6.12	77.6
SW424	Off-base	491511.00	6000639.00	11/10/2022	0.30	0.15	High	Brown	Medium	-	16.6	6.37	98	63.7	6.77	-0.9
SW427	Off-base	490948.72	6001301.83	11/10/2022	0.20	0.10	High	Clear	Medium	-	15.1	6.83	121.5	78.975	6.65	-11.8
SW430	Off-base	490913.00	6002786.00	11/10/2022	0.20	0.10	Medium	Brown	Low	Water slightly cloudy	16.6	9.4	112.6	73.19	8	140.5
SW431	Off-base	490883.28	6003648.07	11/10/2022	0.30	0.10	Low	Brown	Low	-	17.4	7.09	191.2	124.28	7.18	160
SW432	Off-base	490789.00	6003749.00	11/10/2022	0.5	0.10	Low	Brown	Low	Unable to measure water depth precisely	19.3	6.45	149.1	96.915	7.19	170
SW434	Off-base	490476.00	6003891.00	11/10/2022	0.50	0.10	Medium	Brown	Medium	Very high water level	14.8	8.86	76	49.4	7.77	141.7
SW448	On-base	491960.62	5999684.39	14/10/2022	0.35	0.20	High	Brown	Low	-	19.3	7.77	57.9	37.635	6.95	98.2
SW462	Off-base	495777.32	6001658.16	11/10/2022	0.50	0.10	High	Clear	Low	-	14.3	8.68	54.4	35.36	6.01	24.9
SW463	Off-base	491216.27	6000546.54	11/10/2022	0.30	0.15	Low	Brown	Medium	-	19.5	4.72	84.4	54.86	6.53	-14.9
SW470	Off-base	496154.23	6000093.25	12/10/2022	0.50	0.10	Low	Brown	Medium	-	18.2	8.77	118.1	76.765	6.88	168.4
SW471	Off-base	495945.94	6000282.56	12/10/2022	1.00	0.20	Medium	Brown	Medium	-	16.6	3.46	197.4	128.31	6.71	-2.8
SW487	Off-base	495826.91	6000046.42	12/10/2022	2.50	0.20	Low	Brown	Medium	-	18.6	6.46	353.3	229.645	7.5	-22.1

Unit Type: YSI ProPlus
Serial Number:

Job Number: DEF19008

Date of Bump Test	Ambient Air Oxygen Calibration	Zero % Oxygen Solution Calibration	Standard Concentrations	Bump Test Reading	Bump Test Readings Accepted?	Test by (Name)	(Signature)
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
12/10/22 Ambient temp: 13.2°c	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y N pH 7.00 Y N pH 10.00 10.66 Y / N EC: [illegible] µS/cm @ 16°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: 4.07 pH 7.00: 7.05 pH 10.00: N/A EC: 1066 @ 16°C Redox:	Y N Y / N Y / N Y N Y / N	[redacted] EC Calibrated	[redacted]
14/10/22 AT - 12°C	100% Saturation? Y	0% Calibration? Y	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 9.97 Y / N EC: [illegible] µS/cm @ 13°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: 9.72, 13° Redox:	Y / N Y / N Y / N Y / N Y / N	[redacted] KC	[redacted]
25/10/22 AT - 12.6°C	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: 6.96 @ 11.7°C pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		

EQUIPMENT QUALITY REPORT

Water Quality Meter:

Equipment Code: MWQ-1894 Serial Number: 21E101894

The following equipment has been issued as follows:

✓ Equipment is clean ✓ Impeller and probe check

Calibration Results							
Parameter	**Solution Description (Brand, batch # and expire date)**	**Standard**		**Error Range**	**Result**	
Temperature (^{0}C)	-	24 °C		-	24.4	
pH	HC04424075, Exp: Nov 23 HC14519277, Exp: Feb 24	7.01	4.00	± 0.2	7.00	4.01
Sp. Conductivity (µS/cm)	374826, Exp: Nov 23	12880		± 20	12882	
DO (%)	11171, Exp: Sep 22	0%	100%	± 3	0.0	99.2
Redox (mV)	A 362917, Exp: Sep 22 B 362918, Exp: Sep 22	231.2		± 10	231.1	

Date: 07/10/2022

Calibrated by: [redacted]

Please check that the following items are received and all items are returned. Please clean equipment before retuning. **A minimum $20 service/repair charge applies to any unclean or damaged items.**

Item	HT Id No.	Sent	Returned
Water Quality Meter	**MWQ-1894**	✓	
Manual	N/A	✓	
Probe Cluster	N/A	✓	
In situ monitoring cage	N/A	✓	
Storage cup	N/A	✓	
Flow through Cell	N/A	✓	
Calibration cup and lid	N/A	✓	
Spare Batteries / Screwdriver	N/A	✓	
Test and Tag	N/A	✓	

✓ Equipment voltage ✓ Pre-Delivery Calibration Confirmation Test

Date: 07/10/2022

Calibrated by: [redacted]

Booking No: 20087 CLIENTS REF: P/O No: TBC

RETURN DATE: / /	TIME:	CONDITION ON RETURN:

MW Q - 1894

Date of Bump Test	Ambient Air Oxygen Calibration	Zero % Oxygen Solution Calibration	Standard Concentrations	Bump Test Reading	Bump Test Readings Accepted?	Test by (Name)	(Signature)
11/10/22	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) N pH 7.00 (Y) N pH 10.00 (Y) N EC: ~~10.18~~ µS/cm @ ~~16~~ (Y) N 16 °C Redox: ~~233~~ mV @ 16 (Y) N	pH 4.00: 4.03 pH 7.00: 7.05 ~~pH 10.00:~~ EC: 10.69 Redox: 10.68 @ 16°	(Y) N (Y) N Y / N (Y) N (Y) N	[redacted] (AH)	[redacted]
12/10/22	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) N pH 7.00 (Y) N pH 10.00 Y (N) EC: µS/cm @ (Y) N °C Redox: mV @ (Y) N	pH 4.00: 4.02 pH 7.00: 7.03 ~~pH 10.00:~~ EC: Redox:	(Y) N (Y) N Y / N Y / N Y / N	[redacted] (Redox)	[redacted]
13/10/22	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) N pH 7.00 (Y) N pH 10.00 Y (N) EC: µS/cm @ (Y) N °C Redox: mV @ (Y) N	pH 4.00: pH 7.00: 7.03 @ 15°C ~~pH 10.00:~~ EC: Redox:	Y / N (Y) N Y / N Y / N Y / N	[redacted] pH - 7	[redacted]
14/10/22	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) N pH 7.00 (Y) N pH 10.00 Y (N) EC: µS/cm @ (Y) N °C Redox: mV @ (Y) N	pH 4.00: 3.98 @ 13° pH 7.00: ~~pH 10.00:~~ EC: Redox:	(Y) N Y / N Y / N Y / N Y / N	pH - 4 [redacted]	[redacted]
15/10/22	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) N pH 7.00 (Y) N pH 10.00 (Y) N EC: ~~1.44~~ µS/cm @ ~~13~~ Y / N °C Redox: ~~240~~ mV @ ~~13~~ Y / N	~~pH 4.00:~~ ~~pH 7.00:~~ ~~pH 10.00:~~ EC: Redox: 240 @ 13°	Y / N Y / N Y / N Y / N (Y) N	[redacted] (Ec)	[redacted]

	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC:__µS/cm @ __°C Y / N Redox: ___ mV @ Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC:__µS/cm @ __°C Y / N Redox: ___ mV @ Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC:__µS/cm @ __°C Y / N Redox: ___ mV @ Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		

Unit Type: YSI ProPlus
Serial Number: MWQ-1894

Job Number: DEF19008

APPENDIX

E

DATA QUALITY REVIEW

Data Quality Review
Bandiana Military Area, VIC

This Appendix reviews the Quality Assurance (QA) and Quality Control (QC) documentation. Quality assurance encompasses the actions, procedures, checks and decisions undertaken to ensure sample integrity and representativeness, and the reliability and accuracy of analysis results. The QA documentation should also include an indication of the Data Quality Objectives sought in relation to each significant action, test or process involved in the Assessment.

QC activities measure the effectiveness of the QA procedures by undertaking testing, and then comparing results to previously established objectives. QC work will include the internal laboratory testing as well as results of QC samples submitted such as trip blanks and duplicates. The quality of the information and/or data is deemed satisfactory when the QC results demonstrate that agreed objectives have been met.

Cardno undertook a review of its QA/QC as part of the data validation exercise. The findings are summarised below.

QA/QC Aspects	Evidence and Evaluation
	QA Documentation
Sampling and Analysis Quality Plan and Data Quality Objectives	Cardno was engaged by Department of Defence (the client) to carry out the PFAS Ongoing Monitoring Plan (OMP) at Bandiana Military Area (the Site). The monitoring event commenced on 10 October and concluded 15 October 2022. Additional sampling was completed on 10 November 2022. The monitoring event was completed in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP) of 20 October 2022 (Our Ref: OMP002_Bandiana_ SAQP_Rev1.3). The assessment was carried out in general compliance with the following: ▪ Australian Standard AS 4482-2005 Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds. ▪ Department of Defence (2021), Contamination Management Manual (DCMM), Annex L – Data Management, August 2019, Amended June 2021. ▪ Department of Defence (2019), Pollution Prevention Guideline - Routine Water Quality Monitoring, Department of Defence, Department of Energy, 2018, Quality System Manual Schedule B15. ▪ EPA Victoria (2009), Industrial Waste Resources Guidelines, Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 701. ▪ Heads of Environmental Protection Authority's Australia and New Zealand (HEPA) (2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020. ▪ National Environment Protection Council (NEPC), 1999, National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013) (ASC NEPM). ▪ National Health and Medical Research Council (NHMRC) (2019), Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water, August 2019. ▪ USEPA (2006), Guidance for the Data Quality Objectives Process (EPA QA/G-4). A quality control program was implemented during the investigation and the quality assurance procedures used have been reiterated in the report.

QA/QC Aspects	Evidence and Evaluation
	The investigation was carried out in accordance with the Safe Work method Statements (SWMS) and Health, Safety and Environment Plan (HSEP) for the Site. Detailed work plans were also provided and are outlined in the SAQP. The Data Quality Objectives were expressed in terms of the purpose of the assessment and the relevant assessment criteria.
Data Validation Report	This review constitutes a data validation review. This was supported by an Esdat generated "QAQC Checker" excel report, summarised in Tables B3 and B4, Appendix B.
Data Representativeness	
Holding Times	Groundwater and surface water sample analysis holding times were in conformance with EPA Publication IWRG701 2009 *'Sampling and Analysis of Waters, Wastewaters, Soils and Wastes*.
Background Samples	No background samples were collected as part of this assessment.
Equipment Decontamination	The decontamination methodology conducted during this investigation is documented in the body of the report, and was in general conformance with the SAQP and work plans. ▪ Reusable sampling equipment was rinsed with Liquinox® and deionised water prior to the collection of each sample.
Data Precision and Accuracy	
QC Testing – Blind Replicates (Primary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 41 ▪ Blind Replicate Samples Analysed (ALS duplicates): 5 ▪ Blind Replicate Analyte Pairs: 140 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 8 ▪ Percentage of Analyte Pairs Exceeding Criteria: 5.7% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate sample pairs were all within one order of magnitude. The majority of PFAS RPD exceedances are attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B3, Appendix B. ***Surface water*** ▪ Acceptance Criteria: RPD < 30% ▪ Surface water Samples Analysed: 52 ▪ Blind Replicate Samples Analysed: 6 ▪ Blind Replicate Analyte Pairs: 168 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 3 ▪ Percentage of Analyte Pairs Exceeding Criteria: 1.8% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate sample pairs were all within one order of magnitude. The majority of PFAS RPD exceedances are attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B3, Appendix B.
QC Testing – Field Splits (Secondary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 41 ▪ Blind Replicate Samples Analysed: 5 ▪ Blind Replicate Analyte Pairs: 140 (excludes 'analytes' that are a summation of other analytes)

QA/QC Aspects	Evidence and Evaluation
	▪ Number of Analyte Pairs Exceeding Criteria: 5 ▪ Percentage of Analyte Pairs Exceeding Criteria: 3.6% RPD exceedances were associated with PFAS compounds. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. The RPD results are presented in Table B3, Appendix B. ***Surface water*** ▪ Acceptance Criteria: RPD < 30% ▪ Surface water Samples Analysed: 52 ▪ Blind Replicate Samples Analysed: 6 ▪ Blind Replicate Analyte Pairs: 168 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 25 ▪ Percentage of Analyte Pairs Exceeding Criteria: 14.9% RPD exceedances were associated with PFAS compounds. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. The RPD results are presented in Table B3, Appendix B.
Trip Blanks	Five (5) trip blanks were collected, and laboratory tested for PFAS. All analytes were reported below the limit of reporting (LOR). Trip blank results are presented in Table B4, Appendix B.
Laboratory Internal QC	Evidence of the laboratories internal QC testing is present and complete. Both ALS (the primary laboratory) and Eurofins-mgt performed internal QC with adequate testing and mostly satisfactory results for matrix spikes, method blanks and laboratory duplicates. Exceptions include: **Report EM2220286** ▪ Matrix Spike: did not determine a matrix spike recovery as the background level was in excess of spike level for select PFAS compounds, or recovery less than lower data quality objective for select PFAS compounds. ▪ Surrogate Recovery: recovery less than lower data quality objective for select PFAS compounds. **Report EM2222364** ▪ Quality Control Sample Frequency: Less than the specification outlined in NEPM 2013 B3 and ALS QC Standard These exceptions are not considered to impact the results of the investigation.
Laboratory Method Detection Limit	Laboratory reports indicate the method detection limits were lower than the respective assessment criteria.
NATA endorsement of laboratory reports	Laboratory reports were stamped with the NATA endorsement stamp and signature. Laboratory reports are included in Appendix C of this report.
Calibration of Field Equipment	All field equipment used was calibrated by the equipment supplier. Certificates and daily bump test records are included in Appendix D of this report.
Decontamination and Equipment Blanks	Nine (9) rinsate blanks were collected during the investigation. Rinsate blank samples were tested for PFAS which all reported a concentration below the laboratory LOR. Results are shown in Table B4, Appendix B.

QA/QC Aspects	Evidence and Evaluation
Data Comparability	
Full Review of Data	Once all results have been received, Cardno undertook a full review of the data for any anomalies in consideration of historical data at each location (where available), such as first-time detections or exceedances being reported at locations which have not had detections or exceedances previously. Where potentially anomalous data is identified or suspected, further confirmatory measures were undertaken such as re-extraction and reanalysis of the sample by the laboratory and/or additional data quality review. The following samples were reanalysed: MW051, MW304, MW307, MW328, MW346, SW398, SW427 and SW430. All original results were confirmed, with the exception of MW328. Groundwater sample MW328 was re-analysed as a first-time detection was reported, which exceeded the Drinking Water criterion for PFOS+PFHxS (0.18 µg/L) and the Ecological criterion for PFOS (0.13 µg/L). The original extract (e.g. first bottle) was reanalysed and the results were consistent, however, the duplicate of MW328 reported concentrations of PFOS and PFOS+PFHxS below the laboratory LOR. The comparison of RPDs for the samples are included in Table B3, Appendix B, and the primary and duplicate results for PFOS and PFHxS are 171% and 133%, respectively. No other PFAS compounds were reported above the LOR in either the primary or the duplicate. As the water for both bottles was collected from the same water in a single Hydrasleeve deployment, and as this well was historically <LOR, this may indicate a potentially anomalous result in the first bottle. Further sampling as part of the OMP would confirm this. The primary and duplicate results are presented in Table B2, Appendix B, and the higher of the two results has been conservatively adopted for the summary of results discussed in the report and presented in Figure 3, Appendix A.
Standard Procedures	Fieldwork procedures are detailed in the report and followed the work methods outlined in the SAQP.
Qualified Personnel	Staff involved in managing and reviewing the project and those involved in fieldwork are qualified personnel.
Sample Integrity	Field Chain of Custody forms are included in Appendix C of this report and demonstrate sample integrity.
Data Completeness	
Completeness of Test Program	The scope of work undertaken was generally consistent with that set out in the SAQP. Variations to the SAQP are detailed in the Factual Report.
Validity of Data Set	The data quality review indicates no significant systematic errors in the data collection process for surface water and groundwater and therefore, the data set used as the basis for the assessment is considered valid and complete.

APPENDIX

F

INFORMATION ABOUT ENVIRONMENTAL REPORTS

About Site Environmental Assessment Reports

1. Introduction

This document explains the Environmental Site Assessment (ESA) process and the context that applies to the use of Environmental Reports issued by Cardno.

2. What is an ESA?

Environmental Site Assessments (ESA) are undertaken for a range of purposes, specific to the brief issued by the client in each case. The scope may include one or a combination of any of the following:

- A factual report of the condition of a portion of the site or one aspect of an entire site.
- Assessment of the contamination levels in soil to be removed from a site – a waste classification assessment.
- Validation of the success of remediation of a site or a portion of a site.
- Provision of a professional opinion about the suitability of a site for one or more uses, in terms of its contamination status.

The scope of any ESA needs to be defined at the outset.

An ESA is not an Environmental Audit. Such audits are undertaken in accordance with the provisions of regulations enacted in various states of Australia, and are referred to as Site Audits in some jurisdictions. Statutory audits provide certification by EPA accredited auditors that a site is suitable for one or more uses. An ESA may provide similar advice but cannot be used in place of an audit if the latter is required by regulation in any instance. However in some circumstances and jurisdictions an ESA is sufficient to provide "environmental sign-off" of a site.

An ESA may be undertaken for due diligence purposes, to establish whether the site has been impacted to the extent that some beneficial uses of the site may be precluded. Due diligence audits in many cases may be completed as non-statutory Audits, although in some jurisdictions they can also be statutory audits, if defined as such at the outset.

3. The ESA Process

The Client generally initiates the ESA process by specifying a brief which identifies the specific objectives of the assessment. If not, it is the consultants' duty to so specify the ESA

In the case of an ESA to provide an opinion about the suitability of the site for use, it would be conducted in accordance with NEPM (Site Assessment). Such ESA would not commence until a thorough site history assessment (Phase 1 Assessment: to identify the potential for significant contamination at a site) is conducted. However, where the history is unclear, a broad screening of chemical parameters can be used to test environmental media. This normally includes a broad range of organic and inorganic compounds and elements, often referred to as an Environmental Screen.

(In the case of an ESA for a purpose other than to provide an opinion about the suitability of the site for use, it is not always necessary to undertake a Phase 1 assessment.)

The ESA requires sampling of soil at representative locations across the site. A NATA accredited laboratory performs the analysis of soil. It is impractical for all of the soil to be assessed. The ESA is often based on a statistical method of grid or random sampling, augmented by targeted sampling at locations known or suspected to be contaminated. Guidance on sampling strategy and density is provided in Australian Standard AS4482.1–2005. However, some considerable degree of judgement is still required in the application of any sampling and testing strategy. For example the blanket application of the "hot spot" method presented in this standard is often inappropriate given its limitations.

The field program also investigates the likelihood of contamination below the site surface. Field investigations must sample and test fill as well as the natural soils. If contamination is found then it is common for further work to be undertaken to characterise, to the extent practical, its vertical and horizontal extent. However, where fill is encountered and testing shows it to be uncontaminated, it must be realised that the heterogeneous nature of the material might mean that not all pockets of contaminated material can be detected using normal sampling regimes.

EPA guidelines for auditors, that may be relevant for an ESA, indicate the need in all cases to consider the potential for groundwater contamination in any site. This does not mean all sites need to be drilled to sample groundwater, but it is most often the case. Most hydrogeological settings and groundwater conditions are complex and vary in space and time. The condition of groundwater is investigated to identify if any beneficial use or environmental value of groundwater is precluded due to contamination.

As previously stated for soil, all groundwater at the site cannot be tested. The environmental investigations are conducted in accordance with industry standards and guidelines (e.g. EPA Vic Pub 668). This provides a level of confidence that a sufficiently comprehensive assessment of the groundwater at the site is achieved.

Where an investigation shows that groundwater is polluted, consideration should be given to assessing the risks and the need for and practicality of any clean up.

4. Environmental Assessment Report

The ESA Report details the findings of the ESA. It provides summary information on the site definition, the reasons for the assessment and other relevant facts. It reviews the scope and quality of the site investigations, laboratory testing and data analyses undertaken. These reports also present a review of the contamination status of the site, the need for any further clean up, and an opinion on the suitability of the site for a range of beneficial uses and land uses such as “residential – low density”, “commercial” etc, as appropriate.

However, as noted above, some ESA have a narrow scope such as for classification of waste soil for removal from site, and do not make conclusions on suitability of site for use.

The ESA Report generally includes copies of other documents and reports, necessary to support the assessment findings, presented as appendices. These can contain more detailed information than the body of the ESA Report. Care should be taken to also read the appended documents and the ESA report in full.

Cardno generally issues reports in electronic form (e-Report) on CD ROM. ESA Reports are issued in this format as Adobe Acrobat™ PDF files. However, a paper copy of the executive summary of the ESA Report is generally issued to the client, and others as required by the brief or by regulation.

5. Limitations of Environmental Assessment Report

The ESA Report is prepared in a manner that can be easily read by a lay person with a legitimate interest in the contamination status of the site, such as the site owner or occupier, EPA and Local Planning Authority. The ESA report is not intended for use by other parties or for other purposes. Anyone who uses the assessment report for purposes other than specified in the report, does so at their own risk.

The site should only be used for one or more of the beneficial uses and land uses identified in the ESA as suitable.

The conditions and qualifications may apply to the suitability of the site for use, and it is the responsibility of the Client to be cognizant of and accept these in accepting the report. Cardno are only responsible for the issuing of the ESA report but accepts no liability for the costs incurred in the implementation of ESA findings.

The ESA provides a “snapshot” of the site conditions at the time of the site investigation. Consequently, the report may not be valid at a later time if there has been any change to the contamination status of the site in that time. Verification of the status of the site may be required in cases where a significant time has elapsed, or site conditions have changed since the assessment and audit.

The ESA is necessarily limited by constraints such as time, cost and available information; although normal professional practice at the time has been applied with all due care to prepare the report. A necessary requirement of this process is the horizontal and vertical interpolation of data from discrete locations. However, site conditions are generally not homogenous and some discrepancies will occur between the actual and predicted results at locations not directly sampled. There is a risk that contamination may occur at the site and not be identified by a competent investigation and assessment. The approach adopted in sampling (a combination of statistically based grid and judgmental sampling) seeks to reduce, but cannot eliminate, this risk.

Where unexpected occurrences of contamination arise, subsequent to the issue of the ESA Report, Cardno should be permitted to make an interpretation of these facts in relation to the ESA Report findings. Consequently, the Client should inform Cardno and seek their opinion. Cardno accepts no liability for costs incurred due to such

unexpected occurrences, given the inherent uncertainties in the assessment process.

Cardno uses information provided by other parties as the basis for the ESA, and reliance on this information is at the discretion of Cardno. However, however Cardno cannot guarantee any of the facts, findings or conclusions presented by other parties. Cardno will not be liable for the use of information, provided by others that is subsequently found to be intentionally misleading.

The ESA Report is not and does not purport to be anything other than a contaminated land ESA. It is not a geotechnical report and bore logs reproduced are for interpretation of the likely distribution of contamination. They are not intended for geotechnical interpretations and may not be adequate for this purpose.

The ESA Report is not intended to be a comprehensive analysis of the presence and associated risk of asbestos in buildings and services. Where asbestos in buildings and services is known or likely, the report may only caution that an appropriately qualified person be engaged to undertake demolition to avoid contamination of the site.

Cardno

13 August 2015

Appendix F OMP Factual Sampling Report – May 2023

©JBS&G Australia Pty Ltd

PFAS OMP Factual Report

Biannual Sampling Event May 2023

Bandiana Military Area

DEF19008



Prepared for

Department of Defence

12 September 2023

Cardno

Contact Information

Cardno Victoria Pty Ltd
ABN 47 106 610 913

Level 4, 501 Swanston Street,
Melbourne Vic 3000
Australia

www.cardno.com
Phone +61 3 8415 7777
Fax +61 3 8415 7788

Document Information

Prepared for	Department of Defence
Project Name	PFAS OMP Factual Report
File Reference	OMP002_Bandiana_E4 FactualReport_Rev2.docx
Job Reference	DEF19008
Date	12 September 2023
Version Number	2
Effective Date	12/09/2023

Author(s):

Approved By:

[redacted]

[redacted]

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Table of Contents

1	Introduction		1
	1.1	Background	1
	1.2	Purpose & Objectives	1
	1.3	Relevant Guidelines	1
2	Scope of Work		2
	2.1	Review / Revision of the SAQP	2
	2.2	Groundwater Monitoring	2
	2.3	Surface Water Monitoring	3
	2.4	Sediment Monitoring	3
	2.5	Data Management	3
	2.6	Deviations from the OMP SAQP	3
3	Methodology		5
	3.1	Groundwater Sampling Methodology	5
	3.2	Surface Water Sampling Methodology	6
	3.3	Sediment Sampling Methodology	7
	3.4	Quality Control / Quality Assurance	8
	3.5	Assessment Criteria	8
4	Field Observations and Results		9
	4.1	Conditions Impacting the Sampling Event	9
	4.2	Groundwater	9
	4.3	Surface water	11
	4.4	Sediment	12
	4.5	Data Validation	12
5	Summary and Conclusions		13
6	References		14

Appendices

Appendix A Figures
Appendix B Data Assessment Tables
Appendix C Laboratory Certificates
Appendix D Field Records & Calibration Certificates
Appendix E Data Quality Review
Appendix F Information about Environmental Reports

Tables

Table 2-1 Groundwater Monitoring Locations 2

Table 2-2	Surface Water Monitoring Locations	3
Table 2-3	Sediment Monitoring Locations and Frequency	3
Table 2-4	Deviations from the SAQP	4
Table 3-1	Groundwater Sampling Method	5
Table 3-2	Surface Water Sampling Method	6
Table 3-3	Sediment Sampling Method	7
Table 3-4	Criteria for Groundwater and Surface Water	8
Table 4-1	Rainfall prior to and during the event	9
Table 4-2	Summary of Groundwater Results Exceeding Adopted Criteria	10
Table 4-3	Summary of Groundwater Results with First-time Detections or New Exceedances of Adopted Criteria	10
Table 4-4	Summary of Surface Water Results Exceeding Adopted Criteria	11
Table 5-1	Summary of Results	13

List of Abbreviations and Units

Chemical Names

DOC	Dissolved Organic Carbon
DO	Dissolved Oxygen
PFAS	Per- and Poly-fluoroalkyl Substances
PFHxS	Perfluorohexanesulfonate
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
TDS	Total Dissolved Solids (salinity of water)
TSS	Total Suspended Solids

Technical Terms

AFFF	Aqueous Film-Forming Foam
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australia and New Zealand Guidelines
AS	Australian Standard
AST	Above-ground Storage Tank
BGL	Below Ground Level
CoC	Chain of Custody
CSM	Conceptual Site Model
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
HHERA	Human Health and Ecological Risk Assessment
HIL	Health Investigation Level
HSL	Health Screening Level
LOR	Limit of Reporting
N/A	Not Applicable
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environmental Protection Measure
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percentage Difference
SAQP	Sampling and Analysis Quality Plan
SWL	Standing Water Level

Units

ha	Hectares
mBGL	Metres Below Ground Level
mbTOC	Metres below Top of Casing
mg/kg	Milligram per Kilogram (approximately equivalent to ppm)
mg/L	Milligram per Litre
mV	Millivolt
ORP	Oxidation-Reduction Potential
ppm	Parts per Million
µg/L	Micrograms per Litre
µS/cm	Micro Siemens per Centimetre (Electrical Conductivity - Water)

Site Specific

OMP	Ongoing Monitoring Plan
DCMM	Defence Contamination Management Manual
ESdat	Environmental data management software

1 Introduction

1.1 Background

Cardno was engaged by the Department of Defence ("Defence" or "the Client") to carry out the Per- and Poly-Fluoroalkyl Substances (PFAS) Ongoing Monitoring Plan (OMP) at Bandiana Military Area ("the Site"). The Bandiana Military Area (BMA) is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

The OMP was carried out in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP):

> Cardno, 27 April 2023 Reference: DEF19008_OMP002, '*PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area'*, Rev 1.4.

For the purposes of this report:

> The "On-Site Monitoring Area" (the 'Site') is defined as BMA and is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

> The "Off-Site Monitoring Area" is defined as comprising Jack in the Box Creek to the north west of South Bandiana to its confluence with Wodonga Creek, an unnamed creek to the east of North Bandiana to its confluence with the Kiewa River, and the Kiewa River and western Kiewa River floodplain from Middle Creek in the south to north of the unnamed creek.

> The "Management Area" (MA) is defined as comprising the On-Site Monitoring Area and the Off-Site Monitoring Area.

The location of the Site (BMA), MA, the On-Site Monitoring Area and the Off-Site Monitoring Area are displayed in Figure 1 of Appendix A.

1.2 Purpose & Objectives

The objective of the OMP is to assess the changes in the nature and extent of PFAS within the environment, specifically where there is an identified potentially elevated risk to a receptor or a potential future risk to a receptor associated with Defence's historical use of Aqueous Film Forming Foam (AFFF).

The purpose of this PFAS OMP factual report is to provide an up-to-date status of the condition of the Site as it is currently understood in relation to the most recent sampling event.

The objectives of the report are:

> To provide a succinct summary of the May 2023 sampling event and provision of analytical results with supporting tables and figures.

> To provide confirmation of the current understanding of risk.

> To provide supporting data for the assessment of management actions, where relevant.

1.3 Relevant Guidelines

This assessment has been undertaken in general accordance with applicable industry standards for a site investigation for the purpose, objectives and scope identified in this report. These standards are set out in:

> Australian and New Zealand Guidelines, 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

> Australian Standard AS 4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds*[1].

[1] AS 4482.1-2005 is currently 'Withdrawn', but the assessment will consider it still to be suitable as a state of knowledge document until superseded.

> Department of Defence, Department of Energy, 2018, *Quality System Manual Schedule B15*.

> Heads of Environmental Protection Authority's Australia and New Zealand (HEPA), 2020, *PFAS National Environmental Management Plan (NEMP),* Version 2.0, January 2020.

> National Environment Protection Council (NEPC), 1999, *National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013)* (ASC NEPM).

> National Health and Medical Research Council (NHMRC), 2019, *Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water*.

> Standards Australia, 1998, AS/NZ 5667:1998 *Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*.

> U.S. Environmental Protection Agency (EPA), 2006, '*Guidance for the Data Quality Objectives Process (EPA QA/G-4)*'.

> USEPA, 2002, '*Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8)'.*

2 Scope of Work

Cardno carried out the following tasks in order to satisfy the purpose and objectives of this assessment.

2.1 Review / Revision of the SAQP

Cardno undertook a review of the SAQP (Rev1.4; Cardno, 2023) prior to commencement of sampling and completed updates to add the newly installed monitoring well MW416 to the bi-annual sampling scope to fill in the data gap and to bring the SAQP in line with the *PFAS Ongoing Monitoring Program Sampling, Analysis and Quality Plan Guidance* (2023) document. The SAQP (Cardno, 2023) will be reviewed and revised (as required) prior to the next monitoring event scheduled for October 2023.

2.2 Groundwater Monitoring

Sampling of groundwater monitoring wells was performed in general accordance with the SAQP, applying methods set out in Section 3.1 of this report. The groundwater monitoring wells scheduled for sampling as part of the OMP May 2023 biannual sampling event are presented in Table 2-1, and are shown in Figure 3, Appendix A. Additional groundwater monitoring wells were gauged but not sampled for the purpose of assessing groundwater flow (see Figure 2, Appendix A).

Table 2-1 Groundwater Monitoring Locations

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Number of Monitoring Locations	Monitoring Well / Bore ID
Jack in the Box Creek	Biannual	On-Site	4	MW304, MW307, MW312, MW416[1].
		Off-Site	2	MW360, MW361.
Kiewa River	Biannual	On-Site	24	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_I, MW046_D, MW052, MW342, MW345, MW346, MW350_S, MW350_D, MW351, MW352, MW353, MW354, MW403 and MW404.
		Off-Site	3	MW356, MW357, OTH019.

1. MW416 replaced MW326 in May 2023 due to unrepairable damage of MW326 rendering the well unable to be sampled. MW416 was sampled in the May event and will be again in the August-October event (normal frequency) to provide an additional data point as it could not be sampled in October 2022.

2.3 Surface Water Monitoring

Sampling of surface water locations was performed in general accordance with the SAQP, applying methods set out in Section 3.2 of this report. The surface water sampling locations monitored as part of the OMP May 2023 biannual sampling event are presented in Table 2-2, and are shown in Figure 4, Appendix A.

Table 2-2 Surface Water Monitoring Locations

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Number of Monitoring Locations	Monitoring Location ID
Jack in the Box Creek	Biannual	On-Site	16	SW302, SW307, SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, and SW448.
		Off-Site	7	SW424, SW427, SW430, SW431, SW432, SW434 and SW463.
Kiewa River	Biannual	On-Site	12	SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW382, SW387 and SW388.
		Off-Site	18	SW390, SW393, SW395, SW396, SW397, SW398, SW400, SW401, SW403, SW404, SW405, SW409, SW412, SW416, SW462, SW470, SW471 and SW487.

2.4 Sediment Monitoring

Sampling of sediment locations was performed in general accordance with the SAQP, applying methods set out in Section 3.3 of this report. The sediment sampling locations monitored as part of the OMP May 2023 biannual sampling event are presented in Table 2-3, and are shown in Figure 5, Appendix A.

Table 2-3 Sediment Monitoring Locations and Frequency

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Monitoring Location ID
Jack in the Box Creek	Annual (February to May)	On-Site	SD323.
		Off-Site	SD424 and SD463.
Kiewa River	Annual (February to May)	On-Site	SD346, SD355, SD375 and SD382.
		Off-Site	SD395, SD396, SD397, SD400 and SD412.

2.5 Data Management

All the data included in the report have been collected, uploaded to the ESdat database and reviewed according to the data management requirements of the Defence Contamination Management Manual (DCMM) Annex L (Defence, 2021b).

2.6 Deviations from the OMP SAQP

Deviations from the SAQP were attributed to a lack of sampling media as summarised in Table 2-4. On-Site and Off-Site sampling and testing was planned at 33 groundwater locations, 53 surface water locations and 12 sediment locations but was only completed at 33 groundwater locations 49 surface water locations and 12 sediment locations. Further details of why sampling could not be completed at some locations are provided in Table 2-4.

Table 2-4 Deviations from the SAQP

Location	Deviation	Comment/Justification	Impact on Existing Dataset
Surface Water			
SW302	Not Sampled	Location dry	Location was dry, checked after the rainfall event and was still dry. This is a potential data gap as the location has not been sampled previously as it has always been found to be dry (during DSI and OMP). However, this is not considered to have a significant impact on the dataset as the downstream locations were sampled during this event and previous events.
SW307	Not Sampled	Location dry	Location was dry, checked after the rainfall event and was still dry. This is considered to have a minor impact on the dataset as downstream On-Site locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the limit of detection for PFOS+PFHxS and above the adopted drinking water criteria for PFOS+PFHxS. Location was also sampled in November 2021 (first OMP event).
SW379	Not Sampled	Location dry	Location was dry, checked after the rainfall event and was still dry. This is considered to have a minor impact on the dataset as the downstream On-Site locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the limit of detection for PFOS+PFHxS and above the adopted drinking water criteria for PFOS+PFHxS. Location was also sampled in November 2021 (first OMP event).
SW388	Not Sampled	Location dry	Location was dry, checked after the rainfall event and was still dry. This is considered to have a very minor impact on the dataset as the downstream Off-Site locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the limit of detection for PFOS+PFHxS and above the adopted drinking water criteria for PFOS+PFHxS. Location was also sampled in all other previous OMP events and during the DSI.

3 Methodology

3.1 Groundwater Sampling Methodology

Groundwater monitoring was undertaken as detailed in Table 3-1.

Table 3-1 Groundwater Sampling Method

Activity	Details
Dates of Field Activity	1 to 6 May 2023
Well Gauging	Standing Water Levels (SWL) were gauged using an interface probe. All wells were measured against a specified mark at the top of the well casing.
Groundwater Field Parameters	Groundwater water quality parameter field measurements (field parameters) were recorded with a water quality meter after sample collection using extra sample water from within the HydraSleeve® decanted into a clean jar. The following field parameters were recorded using a water quality meter: ▪ pH. ▪ Electrical conductivity (EC). ▪ Oxidation reduction potential (ORP). ▪ Dissolved oxygen (DO). ▪ Temperature. Field parameters measured by the water quality meter were recorded on field data records. All field instruments (e.g., water quality meter) were calibrated by the equipment supplier and/or trained Cardno staff to optimise the accuracy of the measurements taken. Bump tests were also completed daily by field staff during the monitoring event. Calibration certificates and bump test records are provided in Appendix D.
Deployment of HydraSleeve®	The HydraSleeves® were deployed with attached weights in order for sample collection to begin at the lowest point of the well screen. All existing HydraSleeves® which had not been redeployed during the October 2022 event were replaced during the initial gauging round on 3 May 2023. HydraSleeve® were left in wells for a minimum of 4 hours when deployed with bottom weights only, to allow restabilisation of the well following the slight disturbance caused by sampler deployment, before sampling. For wells with a shallow water column, HydraSleeve® sampling devices were deployed with both top and bottom weights and were left in the well for a minimum of 24 hours, to allow the top weight time to compress the HydraSleeve® into the bottom of the well.
Retrieval of HydraSleeve® (Sample Collection)	Samples were collected via the continuous pull method at a rate of approximately 30 cm per second, allowing the water to pass through the check value into the sample sleeve. Samples were discharged immediately (to minimise changes in chemistry) via discharge tube.
Sample collection by bailer or tap	As per the SAQP, where insufficient water was retrieved with the HydraSleeve®, samples were collected by bailer. For bailer sampling, wells were purged until field parameters were stabilized or until dry, whichever is sooner, prior to sample collection. Where sampling of a well was required from a tap due to access constraints, the well was purged by running water from the tap for one minute prior to sample collection directly into laboratory supplied sample containers.
Decontamination procedure	New HydraSleeves® were used at each groundwater monitoring well, thus removing the need for decontamination. Where HydraSleeves® could not be used, single use bailers were used instead which also did not require decontamination. All re-usable sampling/down-hole equipment (e.g., interface probe) was thoroughly washed using PFAS & phosphate-free detergent, then double rinsed with clean water before the sample collection.

Activity	Details
Sample identification, preservation transport and holding times	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM (Defence, 2021b). Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (CoC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All groundwater samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Groundwater quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 water samples (four samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 water samples (four samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling/down-hole equipment] (six samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (five sample total).

3.2 Surface Water Sampling Methodology

Surface water monitoring was undertaken using a grab method as detailed in Table 3-2.

Table 3-2 Surface Water Sampling Method

Item	Details
Dates of Field Activity	1 to 6 May 2023
Surface Water Field Parameters	Surface water field parameters (i.e., pH, EC, ORP, DO, and temperature) were recorded at the time of sampling using a pre-calibrated water quality meter. Field observations such as water body type, channel width, flow, turbidity, and the presence of odours, sheen, nuisance organisms, floating debris and frothing (where observed) were also recorded on field sampling sheets.
Sampling Method	Where possible, the samples were collected directly into sample containers. Where depth permits, sample bottles were positioned at least 10 cm below the surface water level and above the sediment bed and orientated with the opening facing downwards to avoid the collection of surface films. Where access to surface water samples was difficult, the samples were collected using a long-handled sampling device with a plastic container (scoop) that was lowered directly into the water body. Samples were then decanted into the laboratory-supplied sample containers. Samples were collected in accordance with Australian/New Zealand Standards (AS/NZS 5667.1:1998) '*Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*'.
Decontamination	All re-usable sampling equipment (telescopic pole) were thoroughly washed using phosphate-free detergent (Liquinox), and subsequently double rinsed with clean water before the sample collection.
Sample identification, preservation, transport and holding times.	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM (Defence, 2021b).

Item	Details
	Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under CoC documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All surface water samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and Chain of Custody documentation are included in Appendix C.
Laboratory Testing – Quality Control	Surface water quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 water samples (five samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 water samples (five samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling equipment] (six samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (five sample total).

3.3 Sediment Sampling Methodology

Sediment monitoring was undertaken as detailed in Table 3-3.

Table 3-3 Sediment Sampling Method

Item	Details
Dates of Field Activity	1 to 6 May 2023
Sample Collection	Sediment samples were collected from the approximate midpoint of the flow pathway and collected from the top ten centimetres after removal of the immediate surface material using the appropriate tools (e.g. hand trowel, sediment corer or hand auger), with samples placed directly into appropriately labelled, laboratory supplied sample containers and packed in chilled containers for delivery to the laboratory under CoC documentation. Sediment samples were collected after the co-located surface water sample was collected to prevent agitating sediments into the water body and surface water sample matrix. At each sampling location, the sediment sample was visually assessed and observations (physical description including makeup, colour, visible signs of contamination and moisture) recorded on field data sheets.
Decontamination	All re-usable sampling equipment (hand trowel or sediment corer) were thoroughly washed using phosphate-free detergent (Liquinox), and subsequently double rinsed with clean water before the sample collection.
Sample identification, preservation, transport and holding times.	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM (Defence, 2021b). Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under CoC documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998).
Laboratory Testing	All sediment samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are

Item	Details
	NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and CoC documentation are included in Appendix C.
Laboratory Testing – Quality Control	Sediment quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 sediment samples (two samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 sediment samples (two samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling equipment] (six samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (five samples total).

3.4 Quality Control / Quality Assurance

A critical aspect of site assessments is the demonstration of the quality of the data used as the basis for the assessment. This is achieved through a Data Validation process which includes a review of the following data quality indicators, as described in the SAQP:

- QA documentation.
- Bias.
- Data Representativeness.
- Data Precision & Accuracy.
- Data Comparability.
- Data Set Completeness.

A detailed review of these aspects has been undertaken, the results of which are presented in Appendix E. A summary of the data validation from the QA/QC review is included in Section 4.4 below.

3.5 Assessment Criteria

3.5.1 Groundwater and Surface Water

The adopted assessment criteria for groundwater and surface water are detailed in Table 3-4.

Table 3-4 Criteria for Groundwater and Surface Water

Exposure Scenario	Adopted Assessment Criteria		Guidance
	PFHxS / PFOS	PFOA	
	µg/L		
Human Health – Surface Water Recreational	2[2]	10	PFAS NEMP (HEPA, 2020)
Human Health – Drinking Water Quality Guideline[1]	0.07[2]	0.56	PFAS NEMP (HEPA, 2020)
Ecological (99% species protection – high conservation value systems)	0.00023[3]	19	PFAS NEMP (HEPA, 2020)
Ecological (95% species protection – slightly to moderately disturbed systems)	0.13[3]	220	PFAS NEMP (HEPA, 2020)

1. Drinking Water screening guidelines have been adopted for screening purposes for Industrial Water use, Stock Water use and Agriculture/Parks/Gardens Water use.
2. Combined PFOS and PFHxS.
3. PFOS only; For 99% species protection, the criterion of 0.00023 µg/L is lower than the laboratory level of reporting (LOR), however, the PFAS NEMP (HEPA, 2020) allows for the adoption of the laboratory LOR as a screening level rather than a quantified measurement.

4 Field Observations and Results

4.1 Conditions Impacting the Sampling Event

The total rainfall recorded prior to and during the sampling event at the nearest weather station (082056)[2] is detailed in Table 4-1. The monthly rainfall (76.7 mm) recorded in the month of April 2023, prior to the event, was higher than monthly average rainfall in April of 50.4 mm from 1899 to 2022.

Table 4-1 Rainfall prior to and during the event

Date	Total Rainfall (mm)
7 days prior to event (24 April to 30 April 2023)	4.4
Day 1 of event (1 May 2023)	1.2
Day 2 of event (2 May 2023)	0.3
Day 3 of event (3 May 2023)	11.5
Day 4 of event (4 May 2023)	1.4
Day 5 of event (5 May 2023)	0
Day 6 of event (6 May 2023)	1.4

No On-Site activities with potential to impact sample collection or results were noted.

4.2 Groundwater

4.2.1 Summary of Field Observations

4.2.1.1 Water quality parameter field measurements

Stabilised water quality field parameters, water colour and turbidity observations recorded during the groundwater sampling program are presented in field sampling record sheets, included in Appendix D. Water quality field parameters for ORP at MW354 saw a decrease from 172.5 mV in October 2022 to -71.1 mV within this event, a strong sewage odour and a significant number of ants were observed within this well. Water quality field parameters for all other locations were generally consistent with previous events. Groundwater varied from clear to brown with low to high turbidity.

4.2.1.2 Groundwater Elevation and Migration

Groundwater elevation and flow direction across the three bases included in the PFAS OMP is summarised below:

- South Bandiana: Groundwater elevations observed at South Bandiana during the sampling event ranged from 160.202 mAHD at MW304 to 166.569 mAHD at MW317. Slight groundwater mounding was observed at MW329, which is consistent with previous sampling events. Groundwater flow is inferred to flow in a west to north-westerly direction toward the Jack in the Box Creek. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling events.
- North Bandiana: Groundwater elevations observed at North Bandiana during the sampling event ranged from 163.827 mAHD at MW346 to 167.315 mAHD at MW342. Groundwater flow is inferred to flow in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling events.
- East Bandiana: Groundwater elevations observed at East Bandiana during the sampling event ranged from 158.327 mAHD at MW046D to 160.836 mAHD at MW052. Groundwater flow is inferred to flow in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling events.

Groundwater elevation contours and flow directions for May 2023 are shown in Figure 2, Appendix A. Gauging data are presented in Appendix D.

[2] Climate statistics for Australian locations – summary statistics Wodonga Daily Rainfall - 082056 - Bureau of Meteorology (bom.gov.au), last accessed 10 May 2023

4.2.2 Groundwater Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, and are presented in Table B1, Appendix B, and summarised in Table 4-2 below. Of the 33 primary samples that were tested, PFOA was reported above the LOR in 19 samples and PFOS+PFHxS and PFOS were both reported above the LOR in 31 samples.

Table 4-2 Summary of Groundwater Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW052, MW304, MW307, MW312, MW342, MW345, MW346, MW350_D, MW350_S, MW351, MW352, MW353, MW354, MW357, MW360, MW361, MW403, MW404, OTH019	0.00023[2]	96.4	31	31	-
PFOA	MW052, MW307, MW350_S, MW403, MW404	0.56[1]	35.9	19	5	-
PFOS+ PFHxS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW052, MW304, MW307, MW312, MW342, MW345, MW350_D, MW350_S, MW353, MW354, MW357, MW360, MW361, MW403, MW404, OTH019	0.07[1]	454	31	28	MW416 (decrease)

Note:
1. Drinking water assessment criteria
2. Ecological assessment criteria
3. Significant concentration change defined as an order of magnitude increase or decrease

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- MW416 (replacement well for MW326): comparing MW416 results to historical results from MW326, PFOS+PFHxS has decreased by one order of magnitude from a previous result of 0.29 µg/L in November 2021 to <0.01 µg/L in this event.

A summary of locations where a first-time detection, or a new exceedance of guideline values were reported is provided in Table 4-3 below. The laboratory reports are provided in Appendix C.

Table 4-3 Summary of Groundwater Results with First-time Detections or New Exceedances of Adopted Criteria

Deviation Type	Monitoring Well	PFOS+PFHxS concentration (µg/L)		PFOA concentration (µg/L)		PFOS concentration (µg/L)	
		May 2023	Previous Maximum	May 2023	Previous Maximum	May 2023	Previous Maximum
First-time detections	MW312	**0.36**	**0.16**	0.01	<0.01	**0.12**	**0.04**

Note:
Location with first-time detection of PFOS+PFHxS, PFOA or PFOS in latest monitoring round
Location with a new exceedance of lowest adopted guideline values in latest monitoring round
Bold: Exceedance of lowest adopted guideline values

Findings are summarised as follows:

- One groundwater sampling location (MW312) reported a first-time detection of PFOA.
- No groundwater samples reported a new exceedance of lowest adopted guideline values in this event.

4.2.3 Summary of Monitoring Network Condition and Repairs

The monitoring network was observed to be generally in good condition. Cardno completed works in South Bandiana to replace MW326 due to unrepairable damage rendering the well unable to be sampled. Chadwicks Geotechnical drillers decommissioned MW326 and installed new monitoring well MW416. The replacement well (MW416) was installed approximately 2.5 m away from MW326, with similar construction and depth, and screened at approximately the same depth within the Shepparton Colluvium aquifer. Prior to the sampling of MW416, the well was appropriately developed in accordance with industry standards using air-lifting and surge bailing and left to settle for 5 days prior to sampling (Cardno, 2023b). Cardno field staff observed that monitoring well MW051 appeared to have been hit by a vehicle and the standpipe was damaged. The damaged well was repaired by the drillers by replacing the standpipe and stickup monument with a flush-mounted gatic. Further details, including bore logs and well construction details, are presented under separate cover (Cardno, 2023b).

Minor damage was observed on the monument lids of MW307 and MW342. The stick up and well caps were observed to be in good condition and therefore the damage is not expected to have any impact on the wells.

No other changes to the monitoring network condition were noted.

4.3 Surface water

4.3.1 Summary of Field Observations

4.3.1.1 Water quality parameter field measurements

Stabilised water quality field parameters, water colour and turbidity observations recorded during the surface water sampling program are presented in field sampling record sheets, included in Appendix D. Field observations indicated that sampled locations generally had lower water levels and slower flow rates compared with the previous monitoring event in October 2022, due to the October event occurring shortly after heavy rainfall and flooding. SW427 and SW463 saw significant increases in ORP, SW311 and SW401 also saw considerable increases in ORP (that were less than an order of magnitude) compared to October 2022 results. SW311 saw a significant decrease in EC, SW310 also saw a considerable decrease in EC that was less than an order of magnitude compared to October 2022 results. SW424 reported a considerable increase, less than an order of magnitude, in EC values. Surface water varied from clear to brown with low to high turbidity.

4.3.2 Surface Water Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, presented in Table B2, Appendix B, and summarised in Table 4-4 below. Of the 49 primary samples that were tested, PFOA was reported above the LOR in 20 samples, and PFOS+PFHxS and PFOS were both reported above the LOR in 42 samples.

Table 4-4 Summary of Surface Water Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS	SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW380, SW395, SW396, SW397, SW400, SW401, SW403, SW405, SW409, SW412, SW424, SW427, SW430, SW431, SW432, SW434,	0.00023[2]	4.78	42	42	SW387 (decrease)

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
	SW448, SW462, SW463, SW470, SW471, SW487					
PFOA	SW336	0.56[1]	0.57	20	1	-
PFOS+ PFHxS	SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW333, SW336, SW338, SW340, SW346, SW349, SW355, SW370, SW374, SW380, SW396, SW397, SW400, SW401, SW403, SW405, SW424, SW427, SW430, SW448, SW463, SW470, SW471, SW487	0.07[1]	6.2	42	33	SW332, SW387 (decrease)

Note:

1. Drinking water assessment criteria.
2. Ecological assessment criteria.
3. Significant concentration change defined as an order of magnitude increase or decrease.

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- SW332: PFOS+PFHxS has decreased by one order of magnitude from a previous result of 0.10 µg/L in October 2022 to 0.01 µg/L in this event.
- SW387: PFOS has decreased by one order of magnitude from a previous result of 0.13 µg/L in October 2022 to <0.01 µg/L in this event. PFOS+PFHxS has also decreased by one order of magnitude from a previous result of 0.26 µg/L in October 2022 to <0.01 µg/L in this event.

No first-time detections of PFOS, PFOS+PFHxS or PFOA or new exceedances of guideline values were reported. The laboratory reports are provided in Appendix C.

4.4 Sediment

4.4.1 Summary of Field Observations

Odour, colour and other observations recorded during the sediment sampling program are presented in field sampling record sheets, included in Appendix D. Field observations were generally consistent with the previous monitoring event in October 2022.

4.4.2 Laboratory Results

National assessment criteria have not been established for PFAS in sediment.

Of the 12 primary samples analysed, one sample reported PFOA concentrations above the limit of reporting, and 11 samples reported PFOS+PFHxS concentrations above the limit of reporting.

The results of laboratory analysis have been compared against historical results, presented in Table B3, Appendix B and summarised below:

- No first-time detections of PFOS, PFOS+PFHxS or PFOA were reported.
- No locations reported a significant change in concentration for this monitoring event.

4.5 Data Validation

The data validation process has concluded that there are no significant systematic errors in the data collection process. Therefore, the data set used as the basis for the surface water, groundwater and sediment assessment are considered valid and complete. A detailed Data Quality Review is included in Appendix E.

5 Summary and Conclusions

Cardno conducted the May 2023 biannual groundwater, surface water and sediment monitoring event at BMA as part of the PFAS OMP. On-Site and Off-Site sampling and testing was undertaken at 33 groundwater monitoring wells, 49 surface water locations and 12 sediment locations.

Groundwater levels were gauged in all accessible wells before sampling. Groundwater flow was interpreted be generally consistent with October 2022 with flow in a west to north-westerly direction from South Bandiana towards Jack in the Box Creek, and flow in an easterly direction from North Bandiana and East Bandiana towards the Kiewa River.

Table 5-1 Summary of Results

Activity	Details
Deviations from OMP SAQP	> Four surface water locations were not sampled due to locations being dry.
Groundwater Analytical Results	> 33 groundwater samples were collected in total. > One groundwater monitoring location (MW312) reported a first-time detection of PFOA. > No locations reported a first-time detection for PFOS or PFOS+PFHxS. > No locations reported a new exceedance of the lowest adopted assessment criteria for PFOS, PFOA or PFOS+PFHxS. > One groundwater monitoring location (MW416, replacement well for MW326) reported an order of magnitude decrease for PFOS+PFHxS compared to November 2021 when MW326 was last sampled. > All other concentrations reported during this event were generally consistent with results reported in the previous event.
Surface Water Analytical Results	> 49 surface water samples were collected in total. > No locations reported a first-time detection for PFOS, PFOS+PFHxS or PFOA. > No locations reported a new exceedance of the lowest adopted assessment criteria for PFOS, PFOA or PFOS+PFHxS. > One surface water location (SW387) reported an order of magnitude decrease for PFOS and PFOS+PFHxS compared to the previous event. > One surface water location (SW332) reported an order of magnitude decrease for PFOS+PFHxS compared to the previous event. > All other concentrations reported during this event were generally consistent with previous sampling events.
Sediment Analytical Results	> 12 sediment samples were collected in total. > No locations reported a first-time detection for PFOS+PFHxS or PFOA. > No locations reported a new exceedance of the lowest adopted assessment criteria for PFOS, PFOA or PFOS+PFHxS. > No significant concentration changes were reported, and results were generally consistent with results reported in the previous event.
Next Scheduled Monitoring Event	> The next OMP monitoring event is scheduled for October 2023. > SAQP to be reviewed and updated as required prior to the next monitoring event.

6 References

General References

1. Australian and New Zealand Guidelines (ANZG; 2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.
2. Defence (2021a), *PFAS OMP Factual Report Guidance*, Version 0.2, May 2021.
3. Defence (2021b), *Defence Contamination Management Manual (DCMM), Annex L – Data Management*, August 2018, Amended June 2021.
4. Environmental Protection Agency (United States EPA; 2002), EPA/240/R-02/004 *Guidance on Environmental Data Verification and Data Validation*, November 2002.
5. The Heads of EPAs Australia and New Zealand (HEPA; 2020), *PFAS National Environmental Management Plan (NEMP),* Version 2.0, January 2020.
6. National Environment Protection Council (NEPC; 2013), *National Environmental Protection (Assessment of Site Contamination) Measure* (as amended), registered May 2013.
7. National Health and Medical Research Council (2011 – updated 2018), *National Water Quality Management Strategy Australian Drinking Water Guidelines*, 6 August 2018.
8. Nation Health and Medical Research Council (NHMRC; 2019), *Guidance on Per and Poly-fluoroalkyl Substances (PFAS) in Recreational Water*, August 2019.
9. Standards Australia/Standards New Zealand (1998), AS5667.1:1998 *Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*.
10. Standards Australia (1999), AS4482.2-1999 *Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 – Non-volatile and semi-volatile compounds*.
11. USEPA (2006), *Guidance for the Data Quality Objectives Process*, EPA QA/G-4, U.S. Environmental Protection Agency.
12. USEPA (2002), *Guidance on Environmental Data Verification and Data Validation*, EPA QA/G-8, U.S. Environmental Protection Agency.

Site Specific References

13. Cardno (2023), *PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area*, Rev 1.4, 27 April 2023.
14. Cardno (2023b), *OMP002_Bandiana_Well_Replacement*, June 2023.
15. Golder (2018), *Detailed Site Investigation – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations*, 14 June 2018 (reference 1777738-081-R-RevB).
16. Golder (2020), *Human Health and Ecological Risk Assessment – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations*, November 2020 (reference 1777738-150-R-RevB).
17. Golder (2020a), *PFAS Management Area Plan – Bandiana Military Area*, November 2020 (reference 1777738-153-R-RevA-PMAP, Final, November2020).

APPENDIX A

FIGURES

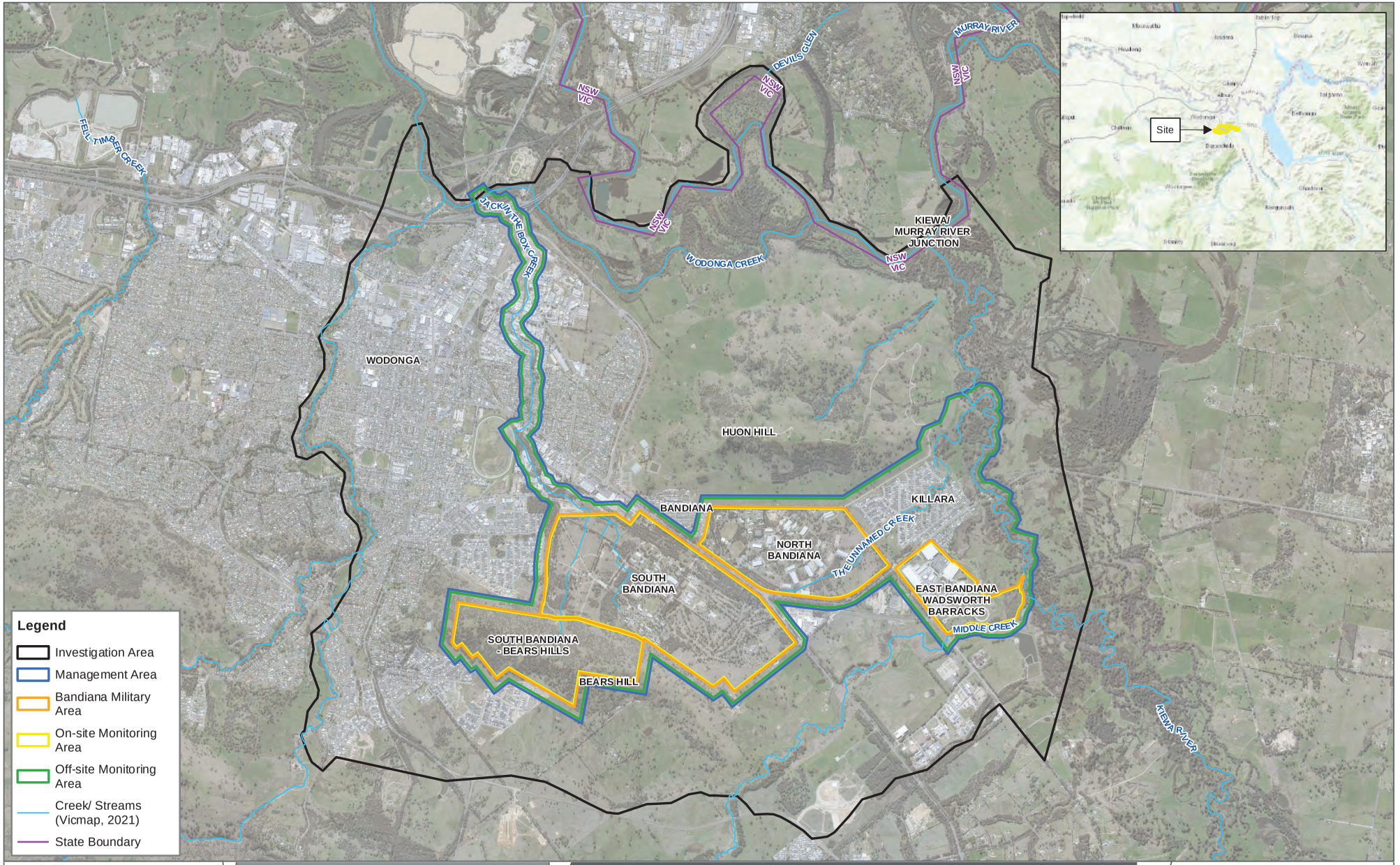


FIGURE 1

1:38,000 Scale at A3

Metres

0 1,000 2,000

Site Locality Plan

BI-ANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

N

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-04-11 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GIS-0150-SiteLocalityPlan_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

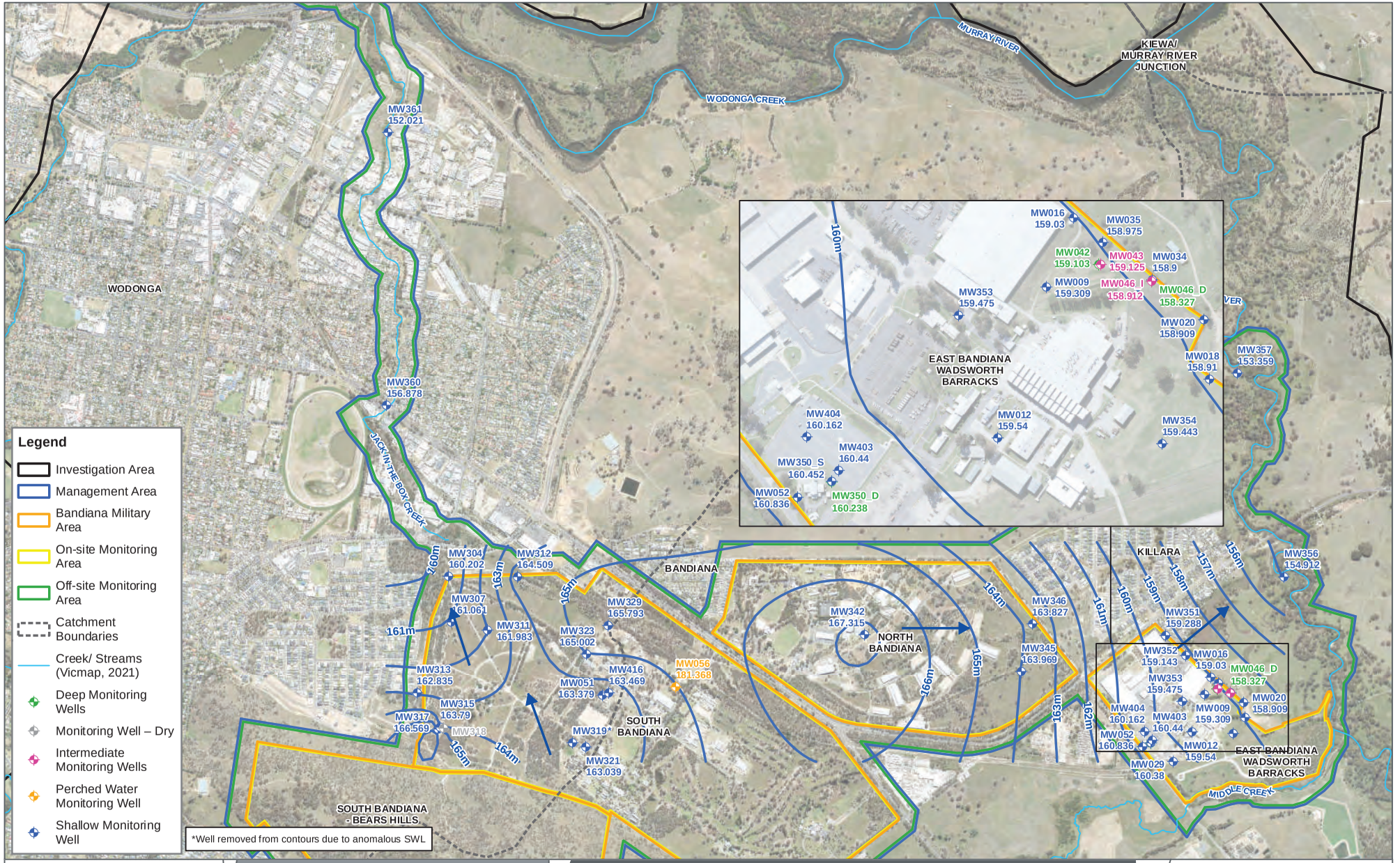


FIGURE 2

1:20,000 Scale at A3

Metres

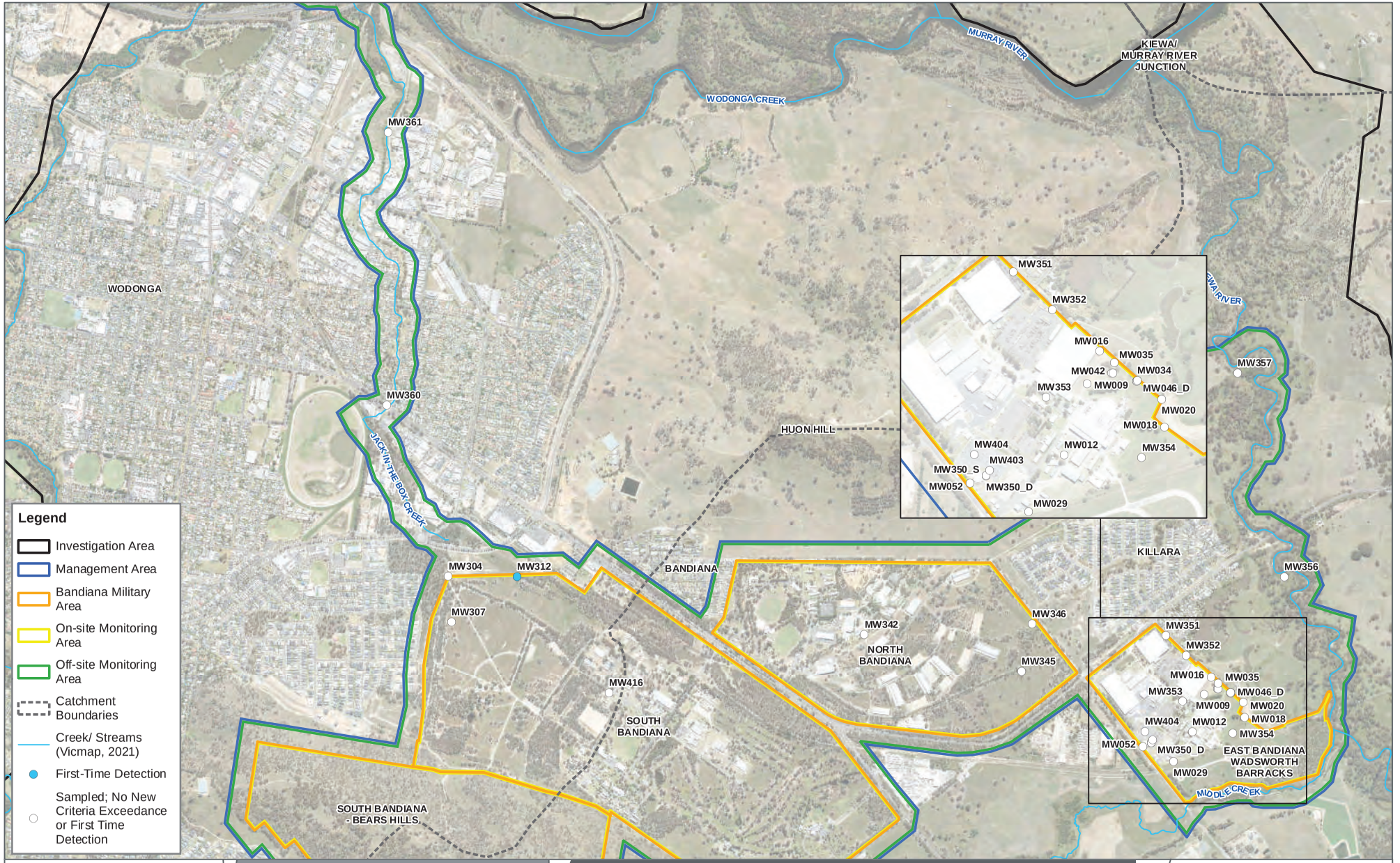
0 500 1,000

Groundwater Elevation Contours - Regional Aquifer (May, 2023)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-06-09 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0344-GW_ElevContours_RegionalA_B_E4.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)


MURRAY RIVER
KIEWA/
MURRAY RIVER
JUNCTION
WODONGA CREEK
MW361
WODONGA
MW360
JACK IN THE BOX CREEK
HUON HILL
MW351
MW352
MW016
MW035
MW042
MW034
MW009
MW353
MW046_D
MW020
MW018
MW404
MW012
MW354
MW403
MW350_S
MW052
MW350_D
MW029
MW357
KIEWA RIVER
KILLARA
MW356
MW304
MW312
BANDIANA
MW307
MW342
MW346
NORTH
BANDIANA
MW345
MW416
SOUTH
BANDIANA
SOUTH BANDIANA
- BEARS HILLS
EAST BANDIANA
WADSWORTH
BARRACKS
MIDDLE CREEK
Legend
Investigation Area
Management Area
Bandiana Military Area
On-site Monitoring Area
Off-site Monitoring Area
Catchment Boundaries
Creek/ Streams (Vicmap, 2021)
First-Time Detection
Sampled; No New Criteria Exceedance or First Time Detection
FIGURE 3
1:20,000 Scale at A3
Metres
0
500
1,000
PFAS Results Summary – Groundwater (May, 2023)
BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE
N
Cardno now Stantec
Map Produced by Cardno now Stantec
Date: 2023-06-02 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0345-GW_ConcNotification_B_E4.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

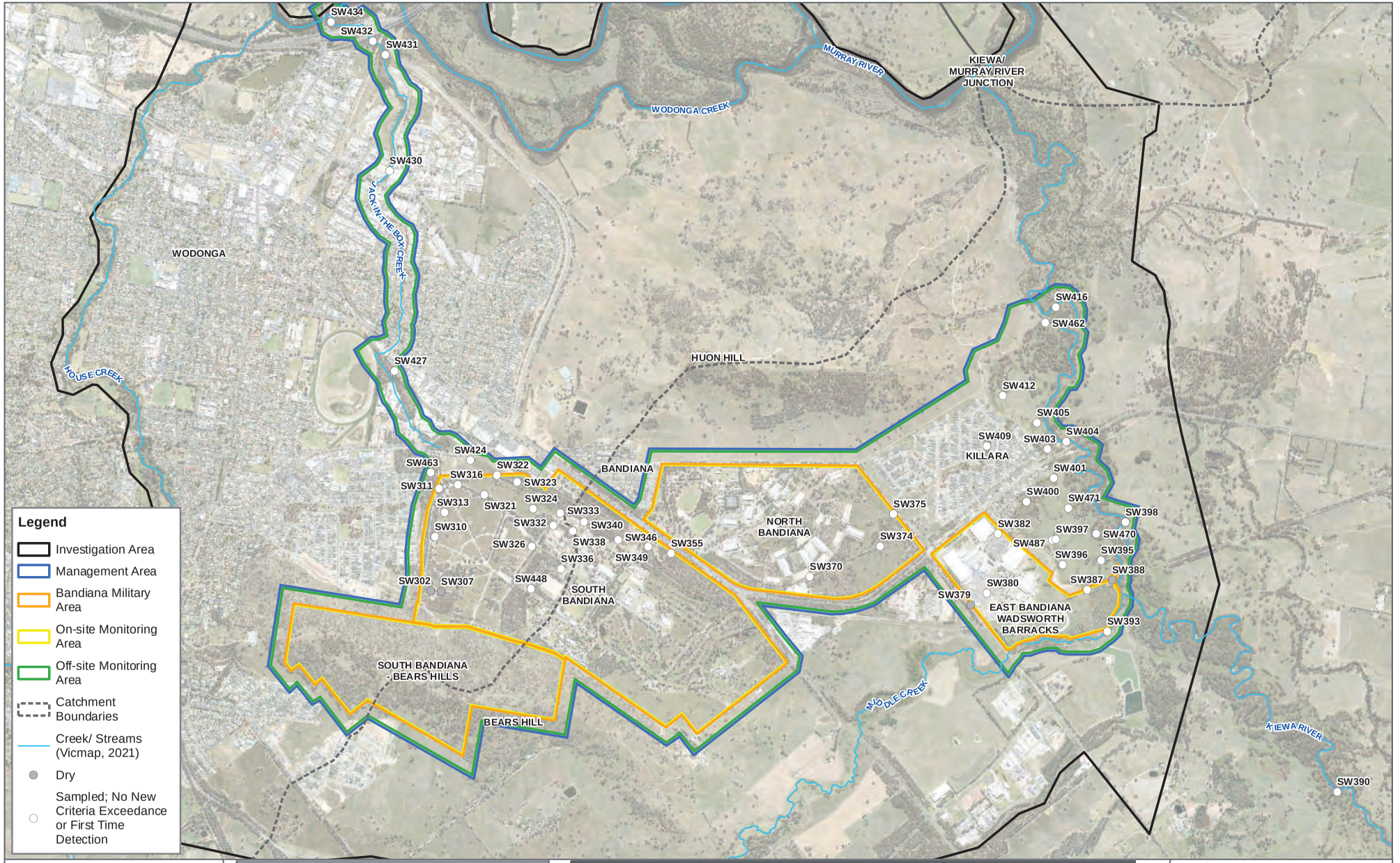


FIGURE 4

1:26,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Surface Water (May, 2023)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

N

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-06-02 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0346-SWConcNotification_B_E4.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

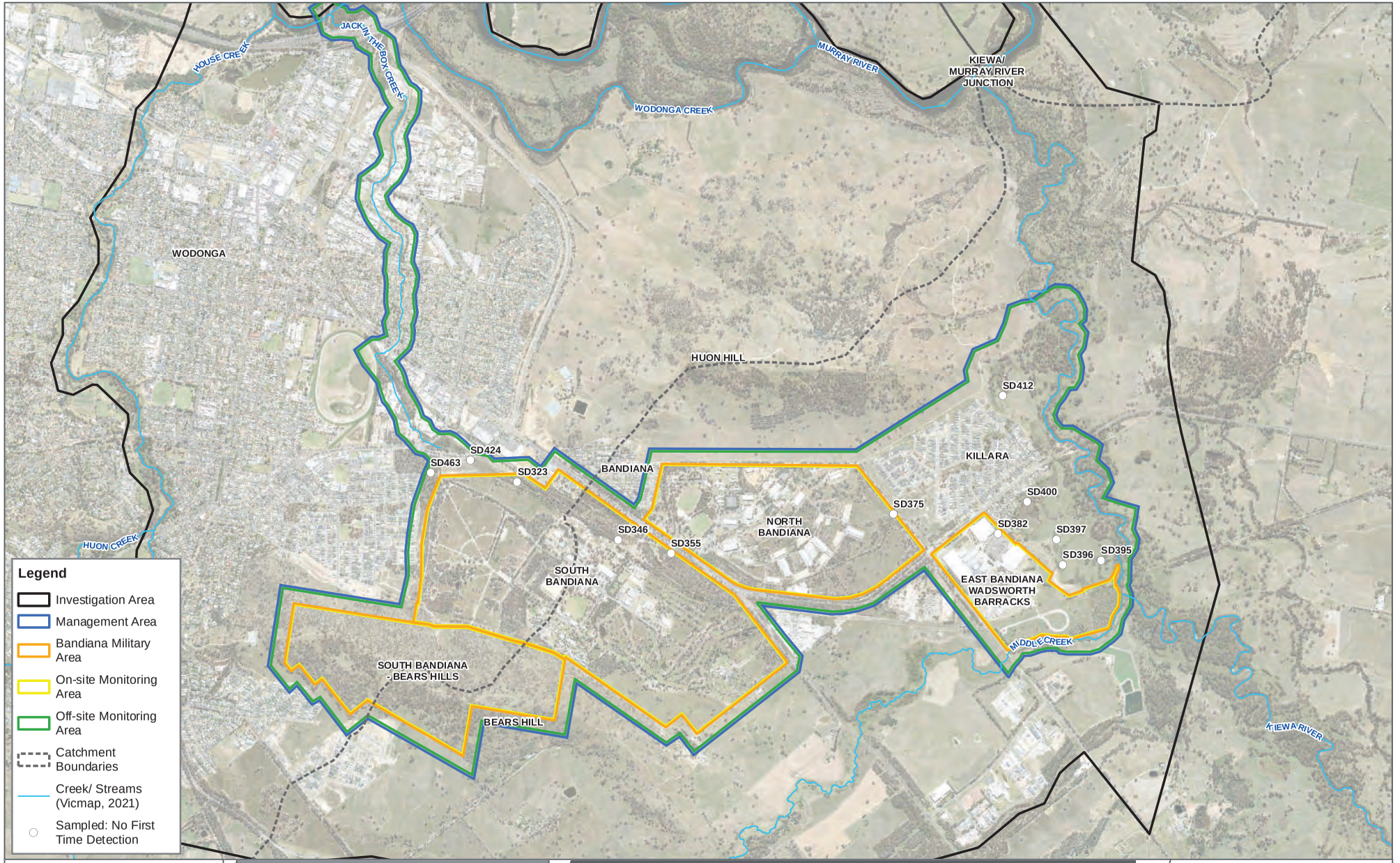


FIGURE 5

1:26,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary – Sediment (May, 2023)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

N

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-06-09 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0347-SEDConcNotification_B_E4.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

APPENDIX B

DATA ASSESSMENT TABLES

					Perfluorocarbons																
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**														
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***														
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220															
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19															
Location Code	Date	Field ID	Sample Type	Lab Report Number																	
MW009	28 Nov 2017	0445E_MW09_S_171128	Normal	ES1730397	3.32	0.45	***9.92***	1.28	1.40	6.60	0.30	<0.02	0.3	0.40	1.85	0.29	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW009_211116	Normal	EM2122998	2.67	0.43	***6.81***	0.95	0.86	4.14	0.45	<0.02	0.2	0.34	1.36	0.25	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_MW009_220505	Normal	EM2208381	3.50	0.44	***9.69***	0.99	1.11	6.19	0.37	<0.02	0.2	0.40	1.32	0.29	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW009_221013	Normal	EM2220286	3.16	0.35	***8.31***	0.82	0.82	5.15	0.32	<0.02	0.2	0.28	1.22	0.20	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW009_230505	Normal	EM2308015	4.07	0.25	***7.32***	0.48	0.53	3.25	0.25	<0.02	<0.1	0.19	0.87	0.14	<0.02	<0.02	<0.02	<0.02	<0.02
MW012	28 Nov 2017	0445E_MW12_S_171128	Normal	ES1730397	0.04	<0.01	**0.30**	<0.02	<0.02	0.26	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445E_QC100_171128	Field_D	ES1730397	0.05	<0.01	**0.37**	<0.02	<0.02	0.32	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Nov 2021	0445_MW012_211111	Normal	EM2122518	0.07	<0.01	**0.43**	<0.02	<0.02	0.36	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_MW012_220505	Normal	EM2208381	0.09	<0.01	**0.54**	0.02	0.03	0.45	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW012_221013	Normal	EM2220286	0.03	<0.01	**0.18**	0.03	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW012_230505	Normal	EM2308015	0.08	<0.01	**0.31**	<0.02	<0.02	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW016	28 Nov 2017	0445E_MW16_S_171128	Normal	ES1730397	7.35	0.39	***11.6***	0.62	0.66	4.22	0.32	<0.02	0.1	0.20	0.95	0.20	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW016_211116	Normal	EM2122998	4.38	0.31	***7.42***	0.40	0.40	3.04	0.25	<0.02	<0.1	0.16	0.68	0.15	<0.02	<0.02	<0.02	<0.02	<0.02
	09 May 2022	0445_MW016_220509	Normal	EM2208649	6.14	0.33	***9.36***	0.45	0.42	3.22	0.27	<0.02	<0.1	0.16	0.61	0.16	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW016_221013	Normal	EM2220286	4.93	0.29	***7.78***	0.40	0.42	2.85	0.21	<0.02	<0.1	0.13	0.65	0.14	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW016_230505	Normal	EM2308015	2.38	0.15	***3.90***	0.23	0.22	1.52	0.12	<0.02	<0.1	0.08	0.38	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
MW018	28 Nov 2017	0445E_MW18_S_171128	Normal	ES1730397	0.13	<0.01	**0.31**	0.02	<0.02	0.18	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW018_211116	Normal	EM2122998	0.32	<0.01	**0.67**	0.06	0.05	0.35	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_MW018_220505	Normal	EM2208381	0.33	<0.01	**0.66**	0.06	0.05	0.33	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW018_221013	Normal	EM2220286	0.06	<0.01	**0.16**	0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW018_230505	Normal	EM2308015	0.35	<0.01	**0.67**	0.05	0.04	0.32	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW020	28 Nov 2017	0445E_MW20_S_171128	Normal	ES1730397	0.72	0.05	***2.34***	0.11	0.14	1.62	0.05	<0.02	<0.1	0.03	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW020_211116	Normal	EM2122998	1.54	0.07	***3.38***	0.15	0.16	1.84	0.09	<0.02	<0.1	0.05	0.23	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
	03 May 2022	0445_MW020_220503	Normal	EM2208381	1.29	0.06	***2.77***	0.13	0.15	1.48	0.07	<0.02	<0.1	0.05	0.17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW020_221013	Normal	EM2220286	1.15	0.05	***2.42***	0.09	0.11	1.27	0.06	<0.02	<0.1	0.03	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	06 May 2023	0445_MW020_230506	Normal	EM2308015	0.93	0.04	***2.03***	0.08	0.10	1.10	0.06	<0.02	<0.1	0.03	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW029	11 Dec 2017	0445E_MW29_S_171211	Normal	ES1731478	0.38	0.04	**0.87**	0.12	0.11	0.49	<0.02	<0.02	<0.1	0.19	0.22	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
	11 Nov 2021	0445_MW029_211111	Normal	EM2122518	0.44	0.06	**1.15**	0.13	0.13	0.71	0.02	<0.02	<0.1	0.16	0.25	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_MW029_220505	Normal	EM2208381	0.64	0.05	**1.28**	0.18	0.14	0.64	<0.02	<0.02	<0.1	0.22	0.29	0.10	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW029_221013	Normal	EM2220286	0.43	0.03	**0.87**	0.06	0.06	0.44	<0.02	<0.02	<0.1	0.07	0.13	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW029_230505	Normal	EM2308015	0.46	0.04	**1.03**	0.12	0.13	0.57	<0.02	<0.02	<0.1	0.12	0.26	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
MW034	28 Nov 2017	0445E_MW34_S_171128	Normal	ES1730397	0.73	0.06	**1.59**	0.10	0.12	0.86	0.02	<0.02	<0.1	0.04	0.13	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW034_211116	Normal	EM2122998	1.86	0.12	***3.46***	0.26	0.21	1.60	0.13	<0.02	<0.1	0.09	0.34	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
	03 May 2022	0445_MW034_220503	Normal	EM2208381	1.57	0.06	***2.57***	0.14	0.14	1.00	0.08	<0.02	<0.1	0.06	0.16	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC106_220503	Field_D	EM2208381	1.27	0.06	***2.35***	0.13	0.14	1.08	0.07	<0.02	<0.1	0.05	0.16	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_QC206_220505	Interlab_D	886780	2.1	0.09	***3.3***	0.14	0.15	1.2	0.06	<0.01	<0.05	0.05	0.20	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
	13 Oct 2022	0445_MW034_221013	Normal	EM2220286	1.17	0.05	**1.93**	0.09	0.09	0.76	0.05	<0.02	<0.1	0.03	0.12	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW034_230505	Normal	EM2308015	1.02	0.03	**1.50**	0.05	0.06	0.48	0.04	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC109_230505	Field_D	EM2308015	0.97	0.03	**1.45**	0.05	0.06	0.48	0.03	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC209_230505	Interlab_D	987797	1.1	0.03	**1.59**	0.05	0.05	0.49	0.04	<0.01	<0.05	0.02	0.07	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW035	28 Nov 2017	0445E_MW35_S_171128	Normal	ES1730397	3.97	0.54	***12.1***	1.72	1.74	8.16	0.39	<0.02	0.4	0.55	2.40	0.41	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW035_211116	Normal	EM2122998	3.32	0.45	***7.45***	0.93	0.87	4.13	0.39	<0.02	0.2	0.34	1.41	0.26	<0.02	<0.02	<0.02	<0.02	<0.02
	03 May 2022	0445_MW035_220503	Normal	EM2208381	5.07	**0.59**	***12.4***	1.16	1.27	7.38	0.49	<0.02	0.2	0.48	1.62	0.35	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW035_221013	Normal	EM2220286	5.96	**0.59**	***14.5***	1.29	1.39	8.51	0.58	<0.02	0.2	0.44	1.98	0.34	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW035_230505	Normal	EM2308015	7.66	0.50	***14.7***	1.07	1.27	7.02	0.56	<0.02	0.2	0.44	1.88	0.30	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC106_230505	Field_D	EM2308015	7.41	0.56	***14.8***	1.21	1.06	7.35	0.54	<0.02	0.3	0.47	1.68	0.34	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC206_230505	Interlab_D	987797	8.3	**0.65**	***15.9***	1.1	1.1	7.6	0.78	<0.01	0.27	0.39	1.6	0.30	<0.01	<0.01	<0.01	<0.01	<0.01
MW042	28 Nov 2017	0445E_MW42_D_171128	Normal	ES1730397	5.66	**0.70**	***15.4***	1.99	2.07	9.76	0.50	<0.02	0.4	0.64	2.88	0.47	<0.02	<0.02	<0.02	<0.02	<0.02
	11 Nov 2021	QC204_211111	Interlab_D	841785	4.3	**0.65**	***11.3***	1.2	0.96	7.0	0.57	<0.01	0.33	0.36	1.9	0.32	<0.01	<0.01	<0.01	<0.01	<0.01
	12 Nov 2021	0445_MW042_211111	Normal	EM2122518	3.61	0.49	***8.66***	0.92	1.13	5.05	0.49	<0.02	0.2	0.35	1.62	0.31	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC104_211111	Field_D	EM2122518	3.30	0.46	***8.79***	0.99	0.81	5.49	0.38	<0.04	<0.2	0.33	1.52	0.24	<0.04	<0.04	<0.04	<0.04	<0.04
	03 May 2022	0445_MW042_220503	Normal	EM2208381	6.03	**0.66**	***15.4***	1.42	1.57	9.35	0.56	<0.02	0.3	0.59	2.02	0.43	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW042_221013	Normal	EM2220286	6.41	**0.60**	***15.1***	1.29	1.40	8.70	0.59	<0.02	0.2	0.44	2.13	0.34	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW042_230505	Normal	EM2308015	7.12	0.48	***13.6***	1.04	1.00	6.49	0.54	<0.02	0.2	0.40	1.72	0.28	<0.02	<0.02	<0.02	<0.02	<0.02
MW043	28 Nov 2017	0445E_MW43_I_171128	Normal	ES1730397	10.5	**1.09**	***32.0***	3.11	3.28	21.5	0.88	<0.02	0.7	1.06	4.85	0.71	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW043_211116	Normal	EM2122998	5.33	**0.76**	***12.9***	1.60	1.73	7.54	0.81	<0.02	0.4	0.61	2.51	0.43	<0.02	<0.02	<0.02	<0.02	<0.02
	03 May 2022	0445_MW043_220503	Normal	EM2208381	6.91	**0.70**	***16.6***	1.52	1.63	9.65	0.59	<0.02	0.3	0.64	2.04	0.44	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW043_221013	Normal	EM2220286	8.10	0.53	***16.0***	1.14	1.20	7.92	0.54	<0.02	0.2	0.41	1.81	0.31	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW043_230505	Normal	EM2308015	5.69	0.36	***10.4***	0.75	0.74	4.68	0.40	<0.02	0.1	0.31	1.26	0.21	<0.02	<0.02	<0.02	<0.02	<0.02

					Perfluorocarbons																
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**														
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***														
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220															
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19															
MW046_D	28 Nov 2017	0445E_MW46_D_171128	Normal	ES1730397	2.05	0.14	***4.31***	0.34	0.36	2.26	0.14	<0.02	<0.1	0.12	0.49	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
	03 May 2022	0445_MW046D_220503	Normal	EM2208381	2.88	0.16	***4.97***	0.37	0.30	2.09	0.17	<0.02	<0.1	0.14	0.41	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW046_D_221013	Normal	EM2220286	1.60	0.06	***2.77***	0.13	0.13	1.17	0.07	<0.02	<0.1	0.05	0.21	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW046_D_230505	Normal	EM2308015	1.65	0.05	***2.82***	0.11	0.15	1.17	0.07	<0.02	<0.1	0.04	0.18	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW046_I	28 Nov 2017	0445E_MW47_I_171128	Normal	ES1730397	1.99	0.16	***4.27***	0.32	0.35	2.28	0.14	<0.02	<0.1	0.12	0.50	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2022	0445_MW046I_220503	Normal	EM2208381	2.17	0.10	***3.59***	0.20	0.20	1.42	0.11	<0.02	<0.1	0.08	0.24	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW046_I_221013	Normal	EM2220286	1.76	0.06	***2.98***	0.13	0.14	1.22	0.08	<0.02	<0.1	0.04	0.20	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW046_I_230505	Normal	EM2308015	1.54	0.05	***2.64***	0.12	0.14	1.10	0.07	<0.02	<0.1	0.04	0.19	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW051	04 Dec 2017	0445S_MW04_S_171204	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	10 Nov 2021	QC200_211110	Interlab_D	841785	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	11 Nov 2021	0445_MW051_211110	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Nov 2021	0445_QC100_211110	Field_D	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Oct 2022	0445_MW051_20221012	Normal	EM2220286	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC104_20221012	Field_D	EM2220286	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC204_221012	Interlab_D	932350	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW052	01 Jun 2012	0445E_MW06-A_120601	Normal	ES1213811	1.24	**0.94**															
		0445E_QC103_120601	Field_D	ES1213811	1.18	**0.91**															
	07 Mar 2017	0445_MW06_070307	Normal	163195	6.6	**3.2**				53											
	11 Dec 2017	0445E_MW06A_S_171211	Normal	ES1731478	7.17	**1.37**	***26.5***	2.86	3.18	19.3	0.45	<0.02	0.6	1.24	4.23	0.98	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW052_211116	Normal	EM2122998	7.23	**0.67**	***11.0***	0.96	0.86	3.81	0.50	<0.02	0.3	0.39	1.60	0.36	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_MW052_220505	Normal	EM2208381	9.31	**0.63**	***14.4***	1.31	1.20	5.08	0.32	<0.02	0.3	0.50	2.14	0.61	<0.02	<0.02	<0.02	<0.02	<0.02
	14 Oct 2022	0445_MW052_221014	Normal	EM2220286	10.4	0.46	***13.7***	0.60	0.57	3.30	0.32	<0.02	0.2	0.20	1.04	0.28	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW052_230505	Normal	EM2308015	10.7	**0.81**	***19.5***	1.80	1.93	8.79	0.47	0.04	0.4	0.54	2.92	0.72	<0.02	<0.02	<0.02	<0.02	<0.02
MW056	29 Nov 2017	0445S_BH111_P_171129	Normal	ES1730510	0.97	0.31	**1.71**	0.14	0.22	0.74	0.15	<0.02	<0.1	<0.02	0.23	0.11	<0.02	<0.02	<0.02	<0.02	<0.02
	11 Nov 2021	0445_MW056_211111	Normal	EM2122518	0.70	0.15	**1.50**	0.18	0.19	0.80	0.07	<0.02	<0.1	0.02	0.14	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Oct 2022	0445_MW056_221012	Normal	EM2220286	0.66	0.08	**1.08**	0.09	0.10	0.42	0.03	<0.02	<0.1	<0.02	0.07	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC105_20221012	Field_D	EM2220286	0.30	0.04	**0.53**	0.05	0.05	0.23	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC205_221012	Interlab_D	932350	0.84	0.10	**1.41**	0.12	0.12	0.57	0.04	<0.01	<0.05	0.02	0.09	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
MW304	06 Dec 2017	0445s_MW304_S_171206	Normal	ES1731108	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Nov 2021	0445_MW304_211110	Normal	EM2122518	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2022	0445_MW304_220504	Normal	EM2208381	0.06	<0.02	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC107_220504	Field_D	EM2208381	0.07	<0.02	**0.12**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC207_220504	Interlab_D	886780	0.10	<0.01	**0.16**	<0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	10 Oct 2022	0445_MW304_221010	Normal	EM2220286	0.30	0.03	**0.62**	0.05	0.03	0.32	0.06	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2023	0445_MW304_230504	Normal	EM2308015	0.14	<0.02	**0.34**	0.03	<0.02	0.20	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC105_230504	Field_D	EM2308015	0.10	<0.02	**0.24**	0.02	<0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC205_230504	Interlab_D	987797	0.15	0.02	**0.32**	0.02	0.02	0.17	0.02	<0.01	<0.05	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW307	06 Dec 2017	0445s_MW307_S_171206	Normal	ES1731108	0.25	0.01	**0.37**	0.02	<0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445s_QC110_171206	Field_D	ES1731108	0.25	0.01	**0.35**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	11 Nov 2021	0445_MW307_211110	Normal	EM2122518	70.4	***34.2***	***422***	87.7	61.2	352	28.4	<0.04	7.1	57.5	140	23.0	0.48	<0.04	<0.04	<0.04	<0.04
	22 Dec 2021	0445_MW307_211222	Normal	EM2125903	94.3	***44.2***	***590***	107	97.6	496	41.2	<0.05	13.4	71.3	170	31.5	0.60	<0.05	<0.05	<0.05	<0.05
		0445_QC101_211222	Field_D	EM2125903	91.0	***44.8***	***577***	110	85.9	486	38.6	<0.05	12.4	71.0	168	32.1	0.60	<0.05	<0.05	<0.05	<0.05
		0445_QC201_211222	Interlab_D	852797	66	**8.9**	***456***	68	74	390	27	<0.01	4.5	16	39	9.5	0.15	<0.01	<0.01	<0.01	<0.01
	04 May 2022	0445_MW307_220504	Normal	EM2208381	88.8	***49.4***	***644***	119	115	555	55.6	<0.04	16.1	72.7	221	35.5	0.62	<0.04	<0.04	<0.04	<0.04
	10 Oct 2022	0445_MW307_221010	Normal	EM2220286	13.7	**4.88**	***72.0***	10.9	10.6	58.3	5.98	<0.02	0.9	7.32	17.3	3.06	0.07	<0.02	<0.02	<0.02	<0.02
	04 May 2023	0445_MW307_230504	Normal	EM2308015	84.1	***35.9***	***454***	76.5	63.1	370	36.3	<0.04	10.0	50.2	122	22.3	0.50	<0.04	<0.04	<0.04	<0.04
MW311	05 Dec 2017	0445S_MW311_S_171205	Normal	ES1731167	0.02	<0.01	**0.09**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445S_QC108_171205	Field_D	ES1731167	0.02	<0.01	**0.09**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	17 Nov 2021	0445_MW311_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Oct 2022	0445_MW311_221010	Normal	EM2220286	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW312	06 Dec 2017	0445s_MW312_S_171206	Normal	ES1731108	<0.01	<0.01	**0.12**	0.02	0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Nov 2021	0445_MW312_21110	Normal	EM2122518	0.02	<0.01	**0.16**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2022	0445_MW312_220504	Normal	EM2208381	<0.01	<0.01	**0.10**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Oct 2022	0445_MW312_221010	Normal	EM2220286	0.04	<0.01	**0.15**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2023	0445_MW312_230504	Normal	EM2308015	0.12	0.01	**0.36**	0.02	0.04	0.24	0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW313	09 Dec 2017	0445_MW313_D_171209	Normal	ES1731468	0.0039	<0.0005	0.0052	<0.0005	<0.0005	0.0013	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	11 Nov 2021	0445_MW313_211111	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	15 Oct 2022	0445_MW313_221015	Normal	EM2220271	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW315	06 Dec 2017	0445s_MW315_D_171206	Normal	ES1731108	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	17 Nov 2021	0445_MW315_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW317	06 Dec 2017	0445s_MW317_D_171206	Normal	ES1731108	0.05	<0.01	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW319	04 Dec 2017	0445S_MW319_D_171204	Normal	ES1731167	0.22	<0.01	**0.31**	0.03	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Nov 2021	0445_MW319_211110	Normal	EM2122518	0.28	<0.01	**0.37**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		QC201_211110	Interlab_D	841785	0.39	<0.01	**0.51**	0.01	<0.01	0.12	<0.01	<0.01	<0.05	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	12 Nov 2021	0445_QC101_211110	Field_D	EM2122518	0.31	<0.01	**0.39**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Oct 2022	0445_MW319_221012	Normal	EM2220286	0.20	<0.01	**0.26**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC203_221012	Interlab_D	932350	0.22	<0.01	**0.28**	<0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

					Perfluorocarbons																
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**														
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***														
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220															
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19															
MW321	05 Dec 2017	0445S_MW321_S_171205	Normal	ES1731167	6.01	0.10	***7.65***	0.05	0.06	1.64	0.38	<0.02	<0.1	0.02	0.16	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Nov 2021	0445_MW321_211110	Normal	EM2122518	0.73	<0.01	**0.92**	<0.02	<0.02	0.19	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Oct 2022	0445_MW321_221210	Normal	EM2220286	0.58	<0.01	**0.75**	<0.02	<0.02	0.17	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC102_20221012	Field_D	EM2220286	0.55	<0.01	**0.70**	<0.02	<0.02	0.15	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC202_221012	Interlab_D	932350	0.07	<0.01	**0.09**	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW323	30 Nov 2017	0445S_MW323_S_171130	Normal	ES1730642	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445S_QC104_S_171130	Field_D	ES1730642	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 Dec 2017	0445S_QC204_171130	Interlab_D	575864	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	10 Nov 2021	0445_MW323_211110	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Oct 2022	0445_MW323_221210	Normal	EM2220286	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW326	04 Dec 2017	0445S_MW326_S_171204	Normal	ES1731167	0.03	<0.01	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Nov 2021	0445_MW326_211110	Normal	EM2122518	0.03	<0.01	**0.29**	0.46	0.11	0.26	<0.02	<0.02	<0.1	0.05	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW329	04 Dec 2017	0445S_MW329_S_171204	Normal	ES1731167	0.02	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Nov 2021	0445_MW329_21110	Normal	EM2122518	0.03	<0.01	**0.17**	0.04	0.03	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC102_211110	Field_D	EM2122518	0.03	<0.01	**0.17**	0.04	0.03	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		QC202_211110	Interlab_D	841785	0.03	<0.01	**0.19**	0.04	0.03	0.16	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	12 Oct 2022	0445_MW329_221012	Normal	EM2220286	0.03	<0.01	**0.37**	0.20	0.10	0.34	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW342	07 Dec 2017	0445N_MW342_S_171207	Normal	ES1731478	<0.01	<0.01	**0.09**	0.03	0.04	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	11 Nov 2021	0445_MW342_211111	Normal	EM2122518	9.21	0.22	***13.5***	0.88	0.53	4.31	0.36	<0.02	<0.1	0.24	0.95	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
	22 Dec 2021	0445_MW342_211222	Normal	EM2125903	4.15	0.20	***9.15***	0.94	0.78	5.00	0.36	<0.02	0.1	0.24	1.10	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC100_211222	Field_D	EM2125903	4.37	0.21	***9.48***	0.89	0.70	5.11	0.37	<0.02	0.1	0.24	1.13	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC200_211222	Interlab_D	852797	5.8	0.32	***12.6***	1.1	1.0	6.8	0.41	<0.01	0.20	0.30	1.4	0.09	<0.01	<0.01	<0.01	<0.01	<0.01
	06 May 2022	0445_MW342_220506	Normal	EM2208381	4.00	0.16	***8.59***	0.68	0.51	4.59	0.26	<0.02	<0.1	0.22	0.81	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC111_220506	Field_D	EM2208381	3.97	0.17	***8.58***	0.74	0.53	4.61	0.26	<0.02	<0.1	0.22	0.75	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC211_220506	Interlab_D	886780	4.9	0.21	***11.3***	0.91	0.75	6.4	0.28	<0.01	0.14	0.19	0.88	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
	15 Oct 2022	0445_MW342_221015	Normal	EM2220286	3.04	0.11	***5.93***	0.46	0.39	2.89	0.14	<0.02	<0.1	0.12	0.58	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2023	0445_MW342_230504	Normal	EM2308015	2.56	0.08	***4.81***	0.35	0.37	2.25	0.11	<0.02	<0.1	0.09	0.39	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
MW345	07 Dec 2017	0445N_MW345_S_171207	Normal	ES1731478	0.10	<0.01	**0.30**	<0.02	0.03	0.20	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	17 Nov 2021	0445_MW345_211117	Normal	EM2122998	0.02	<0.01	**0.25**	0.06	0.05	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	06 May 2022	0445_MW345_220506	Normal	EM2208381	0.03	<0.01	**0.24**	0.04	0.03	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Oct 2022	0445_MW345_221014	Normal	EM2220286	0.08	<0.01	**0.32**	0.05	0.04	0.24	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW345_230505	Normal	EM2308015	0.09	<0.02	**0.32**	0.05	0.04	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW346	07 Dec 2017	0445N_MW346_S_171207	Normal	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445N_QC212_171207	Normal	577514	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	11 Dec 2017	0445N_QC112_171207	Field_D	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW346_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	06 May 2022	0445_MW346_220506	Normal	EM2208381	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Oct 2022	0445_MW346_221012	Normal	EM2220286	0.10	<0.01	**0.17**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2023	0445_MW346_230504	Normal	EM2308015	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_D	10 Dec 2017	0445E_MW350_D_171210	Normal	ES1731478	0.27	0.02	**0.63**	<0.02	0.06	0.36	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	11 Nov 2021	0445_MW350_D_211111	Normal	EM2122518	0.33	0.02	**0.60**	0.04	0.03	0.27	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	03 May 2022	0445_MW350_D_220503	Normal	EM2208381	0.28	0.02	**0.53**	0.10	0.04	0.25	0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	14 Oct 2022	0445_MW350_D_221014	Normal	EM2220286	0.32	0.02	**0.62**	0.10	0.04	0.30	0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW350_ _D_230505	Normal	EM2308015	0.44	0.02	**0.73**	0.04	0.04	0.29	0.03	<0.02	<0.1	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW350_S	10 Dec 2017	0445E_MW350_S_171210	Normal	ES1731478	15.2	**4.24**	***90.2***	7.42	10.4	75.0	2.02	<0.02	1.9	4.72	14.0	1.87	<0.02	<0.02	<0.02	<0.02	<0.02
	11 Nov 2021	0445_MW350_S_211111	Normal	EM2122518	15.3	**3.05**	***48.7***	3.62	2.60	33.4	2.86	<0.04	0.6	1.39	5.72	1.16	<0.04	<0.04	<0.04	<0.04	<0.04
		0445_QC105_211111	Field_D	EM2122518	15.2	**3.06**	***48.9***	3.65	2.70	33.7	2.91	<0.04	0.9	1.45	5.86	1.24	<0.04	<0.04	<0.04	<0.04	<0.04
		QC205_211111	Interlab_D	841785	19	**2.8**	***69***	4.0	5.0	50	2.8	<0.01	0.95	1.3	7.0	1.1	<0.01	<0.01	<0.01	<0.01	<0.01
	06 May 2022	0445_MW350_S_220506	Normal	EM2208381	17.8	**2.67**	***43.4***	2.43	2.69	25.6	2.32	<0.02	0.8	1.71	4.45	1.33	0.02	<0.02	<0.02	<0.02	<0.02
	14 Oct 2022	0445_MW350_S_221014	Normal	EM2220286	19.3	**1.74**	***37.2***	1.37	1.89	17.9	1.93	<0.02	0.4	0.99	3.51	0.62	0.03	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW350_S_230505	Normal	EM2308015	45.5	**5.20**	***98.8***	2.80	4.12	53.3	4.94	<0.02	0.9	2.53	8.28	1.55	0.05	<0.02	<0.02	<0.02	<0.02
MW351	11 Dec 2017	0445E_MW351_S_171211	Normal	ES1731478	0.03	<0.01	0.07	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW351_211116	Normal	EM2122998	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	03 May 2022	0445_MW351_220503	Normal	EM2208381	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC100_220503	Field_D	EM2208381	0.01	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC200_220503	Interlab_D	886780	0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	13 Oct 2022	0445_MW351_221013	Normal	EM2220286	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW351_230505	Normal	EM2308015	0.03	<0.01	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC107_230505	Field_D	EM2308015	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC207_230505	Interlab_D	987797	0.02	<0.01	0.04	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW352	11 Dec 2017	0445E_MW352_S_171211	Normal	ES1731478	0.02	<0.01	**0.10**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW352_211116	Normal	EM2122998	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	03 May 2022	0445_MW352_220503	Normal	EM2208381	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW352_221013	Normal	EM2220286	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW352_230505	Normal	EM2308015	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW353	11 Dec 2017	0445E_MW353_S_171211	Normal	ES1731478	3.14	0.32	***8.98***	0.70	0.76	5.84	0.27	<0.02	<0.1	0.26	0.86	0.14	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Nov 2021	0445_MW353_211111	Normal	EM2122518	3.85	0.22	***7.05***	0.46	0.43	3.20	0.26	<0.02	<0.1	0.13	0.53	0.11	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_MW353_220505	Normal	EM2208381	3.10	0.18	***5.93***	0.40	0.40	2.83	0.21	<0.02	<0.1	0.11	0.37	0.09	<0.02	<0.02	<0.02	<0.02	<0.02

					Perfluorocarbons																
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**														
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***														
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220															
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19															
	13 Oct 2022	0445_MW353_221013	Normal	EM2220286	2.54	0.14	***4.94***	0.30	0.34	2.40	0.16	<0.02	<0.1	0.06	0.35	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW353_230505	Normal	EM2308015	3.28	0.33	***10.1***	1.34	1.50	6.78	0.35	<0.02	0.2	0.34	1.56	0.25	<0.02	<0.02	<0.02	<0.02	<0.02
MW354	11 Dec 2017	0445E_MW354_S_171211	Normal	ES1731478	0.03	<0.01	**0.17**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445E_QC116_171211	Field_D	ES1731478	0.10	0.01	**0.27**	0.03	0.04	0.17	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	16 Nov 2021	0445_MW354_211116	Normal	EM2122998	0.15	0.01	**0.38**	0.04	0.03	0.23	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_MW354_220505	Normal	EM2208381	0.11	<0.01	**0.21**	0.03	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	13 Oct 2022	0445_MW354_221013	Normal	EM2220286	0.08	<0.01	**0.15**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW354_230505	Normal	EM2308015	0.08	<0.01	**0.14**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW356	09 Dec 2017	0445_MW356_S_171209	Normal	ES1731468	0.0009	<0.0005	0.0019	<0.0005	<0.0005	0.0010	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_MW356_211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	07 May 2022	0445_MW356_220505	Normal	EM2208383	<0.01	<0.01	0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2023	0445_MW356_230505	Normal	EM2308009	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW357	09 Dec 2017	0445_MW357_S_171209	Normal	ES1731468	0.0262	0.0011	**0.111**	0.0082	0.0089	0.0844	0.0018	<0.0005	<0.002	0.0010	0.0040	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC114_171209	Field_D	ES1731468	0.0254	0.0011	**0.104**	0.0064	0.0097	0.0788	0.0018	<0.0005	<0.002	0.0006	0.0025	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_MW357_211112	Normal	EM2122519	0.03	<0.01	0.07	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	06 May 2022	0445_MW357_220506	Normal	EM2208383	0.01	<0.01	0.04	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	12 Oct 2022	0445_MW357_221012	Normal	EM2220271	0.02	<0.01	0.06	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2023	0445_MW357_230504	Normal	EM2308009	0.04	<0.01	**0.08**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW360	09 Dec 2017	0445_MW360_S_171209	Normal	ES1731468	0.0836	0.0009	**0.232**	0.0087	0.0173	0.148	0.0048	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	11 Nov 2021	0445_MW360_211111	Normal	EM2122519	0.06	<0.01	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	06 May 2022	0445_MW360_220506	Normal	EM2208383	0.05	<0.01	**0.11**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	15 Oct 2022	0445_MW360_221015	Normal	EM2220271	0.08	<0.01	**0.17**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2023	0445_MW360_230504	Normal	EM2308009	0.08	<0.01	**0.14**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW361	09 Dec 2017	0445_MW361_S_171209	Normal	ES1731468	0.0488	0.0098	**0.296**	0.0110	0.0166	0.247	0.0053	<0.0005	<0.002	0.0155	0.0199	0.0096	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC115_171209	Field_D	ES1731468	0.0454	0.0099	**0.282**	0.0094	0.0141	0.237	0.0050	<0.0005	<0.002	0.0072	0.0206	0.0093	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	11 Nov 2021	0445_MW361_211111	Normal	EM2122519	0.08	0.01	**0.21**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	07 May 2022	0445_MW361_220506	Normal	EM2208381	0.07	0.01	**0.21**	0.02	<0.02	0.14	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	15 Oct 2022	0445_MW361_221015	Normal	EM2220271	0.08	<0.01	**0.11**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	04 May 2023	0445_MW361_230504	Normal	EM2308009	0.10	<0.01	**0.14**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MW403	10 Dec 2017	0445E_BH01_S_171210	Normal	ES1731478	39.4	**3.38**	***96.2***	8.93	9.20	56.8	2.65	<0.02	2.2	4.94	14.7	1.87	0.06	<0.02	<0.02	<0.02	<0.02
	12 Nov 2021	0445_MW403_211111	Normal	EM2122518	52.3	**4.41**	***93.9***	5.04	5.46	41.6	3.48	<0.04	1.1	2.23	9.86	1.69	0.05	<0.04	<0.04	<0.04	<0.04
	05 May 2022	0445_MW403_220505	Normal	EM2208381	52.7	**3.42**	***98.7***	5.98	7.17	46.0	4.26	<0.04	1.3	2.40	11.2	1.66	0.06	<0.04	<0.04	<0.04	<0.04
	14 Oct 2022	0445_MW403_221014	Normal	EM2220286	58.1	**2.85**	***87.3***	4.15	3.95	29.2	2.90	<0.03	0.8	1.59	7.21	1.01	0.04	<0.03	<0.03	<0.03	<0.03
	05 May 2023	0445_MW403_230505	Normal	EM2308015	38.1	**3.04**	***80.5***	6.47	7.04	42.4	2.42	<0.02	1.4	2.80	10.3	1.80	0.04	<0.02	<0.02	<0.02	<0.02
MW404	10 Dec 2017	0445E_BH02_S_171210	Normal	ES1731478	65.7	**6.80**	***118***	9.63	10.0	52.4	4.29	<0.02	1.9	5.15	12.3	3.38	0.03	<0.02	<0.02	<0.02	<0.02
	11 Nov 2021	0445_MW404_211111	Normal	EM2122518	50.2	**3.86**	***81.1***	5.20	3.16	30.9	2.81	<0.04	0.8	1.66	7.59	1.73	<0.04	<0.04	<0.04	<0.04	<0.04
		0445_QC103_211111	Field_D	EM2122518	40.9	**3.96**	***69.3***	5.33	2.88	28.4	2.75	<0.04	1.1	1.74	7.32	1.86	<0.04	<0.04	<0.04	<0.04	<0.04
		QC203_211111	Interlab_D	841785	47	**3.4**	***84***	4.7	4.6	37	1.7	<0.01	0.96	1.4	6.9	1.6	0.02	<0.01	<0.01	<0.01	<0.01
	05 May 2022	0445_MW404_220505	Normal	EM2208381	56.2	**4.02**	***101***	7.16	9.16	45.2	4.18	<0.04	1.2	2.63	13.3	2.80	<0.04	<0.04	<0.04	<0.04	<0.04
	14 Oct 2022	0445_MW404_221014	Normal	EM2220286	82.4	**6.44**	***156***	12.8	13.0	74.0	4.68	<0.03	1.6	4.15	19.6	4.22	0.04	<0.03	<0.03	<0.03	<0.03
	05 May 2023	0445_MW404_230505	Normal	EM2308015	96.4	***12.2***	***198***	19.5	18.2	102	6.71	<0.03	2.6	6.13	31.2	7.04	0.05	<0.03	<0.03	<0.03	<0.03
MW416	06 May 2023	0445_MW416_230506	Normal	EM2308015	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
OTH019	31 Oct 2018	0445_OTH019_181031	Normal	ES1832670	0.0370	0.0053	**0.171**	0.0095	0.0102	0.134	0.0054	<0.0005	<0.002	<0.0005	0.0056	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC120_181031	Field_D	ES1832670	0.0375	0.0058	**0.178**	0.0100	0.0105	0.141	0.0056	<0.0005	<0.002	<0.0005	0.0054	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC220_181031	Interlab_D	625560	0.037	0.004	**0.157**	0.010	0.009	0.12	0.004	<0.001	<0.005	<0.001	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	15 Nov 2021	0445_OTH019_211115	Normal	EM2122969	0.05	<0.01	**0.18**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	05 May 2022	0445_OTH019_220505	Normal	EM2208348	0.04	<0.01	**0.15**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	10 Nov 2022	0445_OTH019_221110	Normal	EM2222364	0.03	<0.01	**0.13**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC110_221110	Field_D	EM2222364	0.03	<0.01	**0.13**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		0445_QC210_221110	Interlab_D	941104	0.05	<0.01	**0.15**	<0.01	<0.01	0.10	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	02 May 2023	0445_OTH019_230502	Normal	EM2308003	0.05	<0.01	**0.16**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of lowest adopted screening criteria in latest monitoring round

					Perfluorocarbons														
					Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
Location Code	Date	Field ID	Sample Type	Lab Report Number															
MW009	28 Nov 2017	0445E_MW09_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.2		
	16 Nov 2021	0445_MW009_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.6		
	05 May 2022	0445_MW009_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	14.9		
	13 Oct 2022	0445_MW009_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	12.6		
	05 May 2023	0445_MW009_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	10.1		
MW012	28 Nov 2017	0445E_MW12_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.30		
		0445E_QC100_171128	Field_D	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37		
	12 Nov 2021	0445_MW012_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.43		
	05 May 2022	0445_MW012_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.62		
	13 Oct 2022	0445_MW012_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21		
	05 May 2023	0445_MW012_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31		
MW016	28 Nov 2017	0445E_MW16_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15.0		
	16 Nov 2021	0445_MW016_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.77		
	09 May 2022	0445_MW016_220509	Normal	EM2208649	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.8		
	13 Oct 2022	0445_MW016_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	10.0		
	05 May 2023	0445_MW016_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.16		
MW018	28 Nov 2017	0445E_MW18_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33		
	16 Nov 2021	0445_MW018_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78		
	05 May 2022	0445_MW018_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77		
	13 Oct 2022	0445_MW018_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18		
	05 May 2023	0445_MW018_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.76		
MW020	28 Nov 2017	0445E_MW20_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.91		
	16 Nov 2021	0445_MW020_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.16		
	03 May 2022	0445_MW020_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.42		
	13 Oct 2022	0445_MW020_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.91		
	06 May 2023	0445_MW020_230506	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.47		
MW029	11 Dec 2017	0445E_MW29_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.61		
	11 Nov 2021	0445_MW029_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.98		
	05 May 2022	0445_MW029_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.26		
	13 Oct 2022	0445_MW029_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.26		
	05 May 2023	0445_MW029_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.77		
MW034	28 Nov 2017	0445E_MW34_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.08		
	16 Nov 2021	0445_MW034_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.67		
	03 May 2022	0445_MW034_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.25		
		0445_QC106_220503	Field_D	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.99		
	05 May 2022	0445_QC206_220505	Interlab_D	886780	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	4.09	2.19	3.39
	13 Oct 2022	0445_MW034_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.38		
	05 May 2023	0445_MW034_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.76		
		0445_QC109_230505	Field_D	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.70		
		0445_QC209_230505	Interlab_D	987797	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.87	1.13	1.62
MW035	28 Nov 2017	0445E_MW35_S_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	20.4		
	16 Nov 2021	0445_MW035_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3		
	03 May 2022	0445_MW035_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	18.7		
	13 Oct 2022	0445_MW035_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	21.5		
	05 May 2023	0445_MW035_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.21	<0.05	<0.05	21.1		
		0445_QC106_230505	Field_D	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.25	<0.05	<0.05	21.2		
		0445_QC206_230505	Interlab_D	987797	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.21	<0.01	<0.01	22.75	8.95	16.55
MW042	28 Nov 2017	0445E_MW42_D_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	25.3		
	11 Nov 2021	QC204_211111	Interlab_D	841785	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.09	<0.01	<0.01	18.21	4.95	11.95
	12 Nov 2021	0445_MW042_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	14.2		
		0445_QC104_211111	Field_D	EM2122518	<0.09	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.05	<0.05	<0.05	13.6		
	03 May 2022	0445_MW042_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	23.1		
	13 Oct 2022	0445_MW042_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.20	<0.05	<0.05	22.3		
	05 May 2023	0445_MW042_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.22	<0.05	<0.05	19.5		
MW043	28 Nov 2017	0445E_MW43_I_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.46	<0.05	<0.05	48.1		
	16 Nov 2021	0445_MW043_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	21.9		
	03 May 2022	0445_MW043_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.24	<0.05	<0.05	24.7		
	13 Oct 2022	0445_MW043_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	22.4		
	05 May 2023	0445_MW043_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.22	<0.05	<0.05	14.7		

					Perfluorocarbons														
					Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
MW046_D	28 Nov 2017	0445E_MW46_D_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	6.08		
	03 May 2022	0445_MW046D_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	6.70		
	13 Oct 2022	0445_MW046_D_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.45		
	05 May 2023	0445_MW046_D_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.44		
MW046_I	28 Nov 2017	0445E_MW47_I_171128	Normal	ES1730397	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	6.04		
	04 May 2022	0445_MW046I_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.58		
	13 Oct 2022	0445_MW046_I_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.66		
	05 May 2023	0445_MW046_I_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.27		
MW051	04 Dec 2017	0445S_MW04_S_171204	Normal	ES1731167	<0.12	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05		
	10 Nov 2021	QC200_211110	Interlab_D	841785	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.01
	11 Nov 2021	0445_MW051_211110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Nov 2021	0445_QC100_211110	Field_D	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Oct 2022	0445_MW051_20221012	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
		0445_QC104_20221012	Field_D	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
		0445_QC204_221012	Interlab_D	932350	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.02	0.02
MW052	01 Jun 2012	0445E_MW06-A_120601	Normal	ES1213811										<0.1					
		0445E_QC103_120601	Field_D	ES1213811										<0.1					
	07 Mar 2017	0445_MW06_070307	Normal	163195										<0.01	<0.01				
	11 Dec 2017	0445E_MW06A_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	41.4		
	16 Nov 2021	0445_MW052_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.7		
	05 May 2022	0445_MW052_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	21.4		
	14 Oct 2022	0445_MW052_221014	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	17.4		
	05 May 2023	0445_MW052_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	29.1		
MW056	29 Nov 2017	0445S_BH111_P_171129	Normal	ES1730510	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.87		
	11 Nov 2021	0445_MW056_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.32		
	12 Oct 2022	0445_MW056_221012	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.48		
		0445_QC105_20221012	Field_D	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.70		
		0445_QC205_221012	Interlab_D	932350	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.95	0.94	1.51
MW304	06 Dec 2017	0445s_MW304_S_171206	Normal	ES1731108	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	10 Nov 2021	0445_MW304_211110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	04 May 2022	0445_MW304_220504	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
		0445_QC107_220504	Field_D	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12		
		0445_QC207_220504	Interlab_D	886780	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.16	0.1	0.16
	10 Oct 2022	0445_MW304_221010	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	0.94		
	04 May 2023	0445_MW304_230504	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	0.46		
		0445_QC105_230504	Field_D	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.28		
		0445_QC205_230504	Interlab_D	987797	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.44	0.17	0.34
MW307	06 Dec 2017	0445s_MW307_S_171206	Normal	ES1731108	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.45		
		0445s_QC110_171206	Field_D	ES1731108	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41		
	11 Nov 2021	0445_MW307_211110	Normal	EM2122518	<0.09	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	0.90	65.4	<0.05	<0.05	928		
	22 Dec 2021	0445_MW307_211222	Normal	EM2125903	<0.14	<0.05	<0.14	<0.14	<0.14	<0.14	<0.05	<0.05	0.90	100	<0.05	<0.05	1,270		
		0445_QC101_211222	Field_D	EM2125903	<0.13	<0.05	<0.13	<0.13	<0.13	<0.13	<0.05	<0.05	0.91	102	<0.05	<0.05	1,240		
		0445_QC201_211222	Interlab_D	852797	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.33	26	<0.01	<0.01	774.38	74.9	464.9
	04 May 2022	0445_MW307_220504	Normal	EM2208381	<0.09	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	1.10	116	<0.05	<0.05	1,440		
	10 Oct 2022	0445_MW307_221010	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	0.11	11.6	<0.05	<0.05	145		
	04 May 2023	0445_MW307_230504	Normal	EM2308015	<0.09	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	0.58	82.8	<0.05	<0.05	954		
MW311	05 Dec 2017	0445S_MW311_S_171205	Normal	ES1731167	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09		
		0445S_QC108_171205	Field_D	ES1731167	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09		
	17 Nov 2021	0445_MW311_211117	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	10 Oct 2022	0445_MW311_221010	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
MW312	06 Dec 2017	0445s_MW312_S_171206	Normal	ES1731108	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19		
	10 Nov 2021	0445_MW312_21110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22		
	04 May 2022	0445_MW312_220504	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
	10 Oct 2022	0445_MW312_221010	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	04 May 2023	0445_MW312_230504	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.49		
MW313	09 Dec 2017	0445_MW313_D_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0052		
	11 Nov 2021	0445_MW313_211111	Normal	EM2122519	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	15 Oct 2022	0445_MW313_221015	Normal	EM2220271	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
MW315	06 Dec 2017	0445s_MW315_D_171206	Normal	ES1731108	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	17 Nov 2021	0445_MW315_211117	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
MW317	06 Dec 2017	0445s_MW317_D_171206	Normal	ES1731108	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
MW319	04 Dec 2017	0445S_MW319_D_171204	Normal	ES1731167	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38		
	10 Nov 2021	0445_MW319_211110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37		
		QC201_211110	Interlab_D	841785	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.55	0.39	0.51
	12 Nov 2021	0445_QC101_211110	Field_D	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.39		
	12 Oct 2022	0445_MW319_221012	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26		
		0445_QC203_221012	Interlab_D	932350	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.28	0.22	0.28

					Perfluorocarbons														
					Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
MW321	05 Dec 2017	0445S_MW321_S_171205	Normal	ES1731167	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.45		
	10 Nov 2021	0445_MW321_211110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.96		
	12 Oct 2022	0445_MW321_221210	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78		
		0445_QC102_20221012	Field_D	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.73		
		0445_QC202_221012	Interlab_D	932350	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.07	0.09
MW323	30 Nov 2017	0445S_MW323_S_171130	Normal	ES1730642	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
		0445S_QC104_S_171130	Field_D	ES1730642	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	05 Dec 2017	0445S_QC204_171130	Interlab_D	575864	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1		
	10 Nov 2021	0445_MW323_211110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Oct 2022	0445_MW323_221210	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
MW326	04 Dec 2017	0445S_MW326_S_171204	Normal	ES1731167	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03		
	10 Nov 2021	0445_MW326_211110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.01		
MW329	04 Dec 2017	0445S_MW329_S_171204	Normal	ES1731167	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	10 Nov 2021	0445_MW329_21110	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
		0445_QC102_211110	Field_D	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
		QC202_211110	Interlab_D	941785	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.28	0.03	0.19
	12 Oct 2022	0445_MW329_221012	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	0.73		
MW342	07 Dec 2017	0445N_MW342_S_171207	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20		
	11 Nov 2021	0445_MW342_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.8		
	22 Dec 2021	0445_MW342_211222	Normal	EM2125903	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.0		
		0445_QC100_211222	Field_D	EM2125903	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.2		
		0445_QC200_211222	Interlab_D	852797	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	17.88	6.12	12.92
	06 May 2022	0445_MW342_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.3		
		0445_QC111_220506	Field_D	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.3		
		0445_QC211_220506	Interlab_D	886780	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	15.27	5.11	11.51
	15 Oct 2022	0445_MW342_221015	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.77		
	04 May 2023	0445_MW342_230504	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.23		
MW345	07 Dec 2017	0445N_MW345_S_171207	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33		
	17 Nov 2021	0445_MW345_211117	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36		
	06 May 2022	0445_MW345_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31		
	12 Oct 2022	0445_MW345_221014	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41		
	05 May 2023	0445_MW345_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41		
MW346	07 Dec 2017	0445N_MW346_S_171207	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
		0445N_QC212_171207	Normal	577514	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1		
	11 Dec 2017	0445N_QC112_171207	Field_D	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	16 Nov 2021	0445_MW346_211117	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	06 May 2022	0445_MW346_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Oct 2022	0445_MW346_221012	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17		
	04 May 2023	0445_MW346_230504	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
MW350_D	10 Dec 2017	0445E_MW350_D_171210	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.79		
	11 Nov 2021	0445_MW350_D_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77		
	03 May 2022	0445_MW350_D_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.75		
	14 Oct 2022	0445_MW350_D_221014	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.86		
	05 May 2023	0445_MW350 _ D_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.93		
MW350_S	10 Dec 2017	0445E_MW350_S_171210	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.42	<0.05	<0.05	137		
	11 Nov 2021	0445_MW350_S_211111	Normal	EM2122518	<0.09	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.37	<0.05	<0.05	70.1		
		0445_QC105_211111	Field_D	EM2122518	<0.09	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.29	<0.05	<0.05	71.0		
		QC205_211111	Interlab_D	941785	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.43	<0.01	<0.01	95.78	21.8	71.8
	06 May 2022	0445_MW350_S_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.22	<0.05	<0.05	63.0		
	14 Oct 2022	0445_MW350_S_221014	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.80	<0.05	<0.05	50.5		
	05 May 2023	0445_MW350_S_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.91	<0.05	<0.05	131		
MW351	11 Dec 2017	0445E_MW351_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07		
	16 Nov 2021	0445_MW351_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	03 May 2022	0445_MW351_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
		0445_QC100_220503	Field_D	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
		0445_QC200_220503	Interlab_D	886780	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.01	0.02
	13 Oct 2022	0445_MW351_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
	05 May 2023	0445_MW351_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
		0445_QC107_230505	Field_D	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
		0445_QC207_230505	Interlab_D	987797	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.02	0.04
MW352	11 Dec 2017	0445E_MW352_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
	16 Nov 2021	0445_MW352_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
	03 May 2022	0445_MW352_220503	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
	13 Oct 2022	0445_MW352_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	05 May 2023	0445_MW352_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
MW353	11 Dec 2017	0445E_MW353_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3		
	12 Nov 2021	0445_MW353_211111	Normal	EM2122518	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.19		
	05 May 2022	0445_MW353_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.69		

					Perfluorocarbons														
					Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																			
PFAS NEMP 2.0 Table 1 Health Recreational Water																			
PFAS NEMP 2.0 Table 5 Freshwater 95%																			
PFAS NEMP 2.0 Table 5 Freshwater 99%																			
	13 Oct 2022	0445_MW353_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.35		
	05 May 2023	0445_MW353_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15.9		
MW354	11 Dec 2017	0445E_MW354_S_171211	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19		
		0445E_QC116_171211	Field_D	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38		
	16 Nov 2021	0445_MW354_211116	Normal	EM2122998	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.50		
	05 May 2022	0445_MW354_220505	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
	13 Oct 2022	0445_MW354_221013	Normal	EM2220286	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	05 May 2023	0445_MW354_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14		
MW356	09 Dec 2017	0445_MW356_S_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0019		
	12 Nov 2021	0445_MW356_211112	Normal	EM2122519	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	07 May 2022	0445_MW356_220505	Normal	EM2208383	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	05 May 2023	0445_MW356_230505	Normal	EM2308009	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
MW357	09 Dec 2017	0445_MW357_S_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.136		
		0445_QC114_171209	Field_D	ES1731468	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.127		
	12 Nov 2021	0445_MW357_211112	Normal	EM2122519	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07		
	06 May 2022	0445_MW357_220506	Normal	EM2208383	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
	12 Oct 2022	0445_MW357_221012	Normal	EM2220271	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06		
	04 May 2023	0445_MW357_230504	Normal	EM2308009	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08		
MW360	09 Dec 2017	0445_MW360_S_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.263		
	11 Nov 2021	0445_MW360_211111	Normal	EM2122519	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	06 May 2022	0445_MW360_220506	Normal	EM2208383	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11		
	15 Oct 2022	0445_MW360_221015	Normal	EM2220271	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17		
	04 May 2023	0445_MW360_230504	Normal	EM2308009	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14		
MW361	09 Dec 2017	0445_MW361_S_171209	Normal	ES1731468	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.386		
		0445_QC115_171209	Field_D	ES1731468	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.360		
	11 Nov 2021	0445_MW361_211111	Normal	EM2122519	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22		
	07 May 2022	0445_MW361_220506	Normal	EM2208381	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
	15 Oct 2022	0445_MW361_221015	Normal	EM2220271	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11		
	04 May 2023	0445_MW361_230504	Normal	EM2308009	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14		
MW403	10 Dec 2017	0445E_BH01_S_171210	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.01	0.05	<0.05	145		
	12 Nov 2021	0445_MW403_211111	Normal	EM2122518	<0.10	<0.04	<0.10	<0.10	<0.10	<0.10	<0.04	<0.04	<0.05	1.41	<0.05	<0.05	129		
	05 May 2022	0445_MW403_220505	Normal	EM2208381	<0.09	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.95	<0.05	<0.05	137		
	14 Oct 2022	0445_MW403_221014	Normal	EM2220286	<0.08	<0.03	<0.08	<0.08	<0.08	<0.08	<0.03	<0.03	<0.05	0.50	0.05	<0.05	112		
	05 May 2023	0445_MW403_230505	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.53	<0.05	<0.05	116		
MW404	10 Dec 2017	0445E_BH02_S_171210	Normal	ES1731478	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.12	<0.05	<0.05	172		
	11 Nov 2021	0445_MW404_211111	Normal	EM2122518	<0.10	<0.04	<0.10	<0.10	<0.10	<0.10	<0.04	<0.04	<0.05	0.06	<0.05	<0.05	108		
		0445_QC103_211111	Field_D	EM2122518	<0.11	<0.04	<0.11	<0.11	<0.11	<0.11	<0.04	<0.04	<0.05	0.06	<0.05	<0.05	96.3		
		QC203_211111	Interlab_D	841785	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.08	<0.01	<0.01	110.86	50.4	87.4
	05 May 2022	0445_MW404_220505	Normal	EM2208381	<0.09	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	146		
	14 Oct 2022	0445_MW404_221014	Normal	EM2220286	<0.08	<0.03	<0.08	<0.08	<0.08	<0.08	<0.03	<0.03	<0.05	0.07	<0.05	<0.05	223		
	05 May 2023	0445_MW404_230505	Normal	EM2308015	<0.09	<0.03	<0.09	<0.09	<0.09	<0.09	<0.03	<0.03	<0.05	0.12	<0.05	<0.05	302		
MW416	06 May 2023	0445_MW416_230506	Normal	EM2308015	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
OTH019	31 Oct 2018	0445_OTH019_181031	Normal	ES1832670	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.208		
		0445_QC120_181031	Field_D	ES1832670	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.217		
		0445_QC220_181031	Interlab_D	625560	<0.001	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.194	0.041	0.161
	15 Nov 2021	0445_OTH019_211115	Normal	EM2122969	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18		
	05 May 2022	0445_OTH019_220505	Normal	EM2208348	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	10 Nov 2022	0445_OTH019_221110	Normal	EM2222364	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13		
		0445_QC110_221110	Field_D	EM2222364	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13		
		0445_QC210_221110	Interlab_D	941104	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.15	0.05	0.15
	02 May 2023	0445_OTH019_230502	Normal	EM2308003	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16		

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of lowest adopted screening criteria in latest monitoring round

																			Perfluorocarbons			
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**															
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***															
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																
Location Code	Date	Field ID	Sample Type	Lab Report Number																		
SW307	17 Nov 2021	0445_SW307_211117	Normal	EM2122998	0.07	<0.01	**0.17**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW307_221013	Normal	EM2220286	0.14	<0.01	**0.25**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW310	17 Nov 2021	0445_SW310_211117	Normal	EM2122998	0.11	<0.01	**0.32**	<0.02	<0.02	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW310_221010	Normal	EM2220286	0.18	<0.01	**0.46**	0.04	0.03	0.28	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_SW310_230503	Normal	EM2308015	0.09	<0.01	**0.12**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW311	17 Nov 2021	0445_SW311_211117	Normal	EM2122998	1.75	0.03	***2.16***	0.03	0.02	0.41	0.03	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_QC100_20221010	Field_D	EM2220286	0.97	0.07	**1.89**	0.05	0.04	0.92	0.03	<0.02	0.2	0.24	0.29	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC200_221010	Interlab_D	932350	1.2	0.10	***2.4***	0.07	0.06	1.2	0.04	<0.01	0.23	0.34	0.36	0.06	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW311_221010	Normal	EM2220286	0.74	0.07	**1.56**	0.04	0.04	0.82	0.03	<0.02	<0.1	0.22	0.26	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW311_230506	Normal	EM2308015	0.18	<0.01	**0.20**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW313	17 Nov 2021	0445_QC111_211117	Field_D	EM2122998	3.85	0.30	***5.13***	0.10	0.07	1.28	0.06	<0.02	0.1	0.33	0.48	0.11	0.19	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC211_211117	Interlab_D	842787	4.5	0.35	***6.1***	0.08	0.08	1.6	0.08	<0.01	0.23	0.32	0.53	0.12	0.18	0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW313_211117	Normal	EM2122998	3.13	0.30	***4.43***	0.10	0.06	1.30	0.07	<0.02	0.1	0.31	0.44	0.11	0.18	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW313_221010	Normal	EM2220286	2.91	0.10	***3.97***	0.10	0.08	1.06	0.04	<0.02	0.1	0.37	0.44	0.05	0.08	<0.02	<0.02	<0.02	<0.02	<0.05
	01 May 2023	0445_SW313_230501	Normal	EM2308015	1.90	0.14	***3.33***	0.14	0.12	1.43	0.03	<0.02	0.1	0.41	0.59	0.10	0.08	<0.02	<0.02	<0.02	<0.02	<0.05
SW316	17 Oct 2017	0445S_SW316_0.1_171017	Normal	ES1726190	0.722	0.0140	**1.11**	0.0242	0.0306	0.388	0.0232	0.0020	<0.002	0.0080	0.0418	0.0062	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	17 Nov 2021	0445_SW316_211117	Normal	EM2122998	0.52	0.02	**1.02**	0.04	0.03	0.50	0.02	<0.02	<0.1	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	16 May 2022	0445S_SW316_220516	Normal	EM2209833	0.14	<0.01	**0.23**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW316_221010	Normal	EM2220286	0.91	0.03	**1.37**	0.03	0.02	0.46	0.03	<0.02	<0.1	0.04	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_QC103_230503	Field_D	EM2308015	0.11	<0.01	**0.19**	0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC203_230503	Interlab_D	987797	0.14	<0.01	**0.21**	0.02	<0.01	0.07	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW316_230503	Normal	EM2308015	0.11	<0.01	**0.18**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW321	17 Nov 2021	0445_QC112_211117	Field_D	EM2122998	3.88	0.08	***6.24***	0.18	0.17	2.36	0.10	<0.02	<0.1	0.05	0.36	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC212_211117	Interlab_D	842787	7.5	0.11	***10.3***	0.18	0.26	2.8	0.13	<0.01	0.06	0.06	0.45	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW321_211117	Normal	EM2122998	3.48	0.09	***5.80***	0.16	0.16	2.32	0.10	<0.02	<0.1	0.06	0.35	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW321_220504	Normal	EM2208381	6.13	0.05	***7.09***	0.05	0.05	0.96	0.10	<0.02	<0.1	0.02	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW321_221010	Normal	EM2220286	0.96	<0.01	**1.12**	<0.02	<0.02	0.16	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	01 May 2023	0445_QC100_230501	Field_D	EM2308015	4.28	0.03	***4.97***	0.04	0.05	0.69	0.05	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC200_230501	Interlab_D	987797	4.7	0.03	***5.32***	0.04	0.04	0.62	0.07	<0.01	<0.05	<0.01	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW321_230501	Normal	EM2308015	3.97	0.03	***4.67***	0.04	0.05	0.70	0.05	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW322	17 Nov 2021	0445_SW322_211117	Normal	EM2122998	2.38	0.07	***4.48***	0.16	0.16	2.10	0.08	<0.02	<0.1	0.05	0.31	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW322_220504	Normal	EM2208381	6.97	0.06	***8.01***	0.04	0.06	1.04	0.11	<0.02	<0.1	0.02	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW322_221010	Normal	EM2220286	0.83	<0.01	**1.00**	<0.02	<0.02	0.17	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW322_230504	Normal	EM2308015	3.13	0.02	***3.81***	0.04	0.04	0.68	0.04	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW323	17 Oct 2017	0445S_SW323_0.2_171017	Normal	ES1726190	1.13	0.0304	**1.42**	0.0212	0.0278	0.287	0.0212	0.0044	<0.002	0.0240	0.0652	0.0210	0.0094	0.0032	<0.0020	<0.0020	<0.0020	<0.0050
	17 Nov 2021	0445_SW323_211117	Normal	EM2122998	0.66	0.03	**0.94**	0.02	<0.02	0.28	<0.02	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW323_220504	Normal	EM2208381	0.65	0.02	**0.85**	0.03	<0.02	0.20	<0.02	<0.02	<0.1	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW323_221010	Normal	EM2220286	0.56	0.03	**0.79**	0.04	<0.02	0.23	<0.02	<0.02	<0.1	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW323_230504	Normal	EM2308015	0.63	0.02	**0.86**	0.03	0.02	0.23	<0.02	<0.02	<0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW324	20 Oct 2017	0445S_SW324_0.1_171020	Normal	ES1726682	1.53	0.155	***2.03***	0.0759	0.130	0.496	0.0823	<0.0005	<0.002	0.114	0.139	0.0654	0.0372	0.0075	0.0022	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_QC110_211117	Field_D	EM2122998	1.61	0.08	***2.23***	0.06	0.04	0.62	0.03	<0.02	<0.1	0.10	0.15	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC210_211117	Interlab_D	842787	2.6	0.11	***3.6***	0.05	0.06	1.0	0.05	0.01	0.10	0.11	0.21	0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW324_211117	Normal	EM2122998	1.86	0.10	***2.61***	0.06	0.05	0.75	0.04	<0.02	<0.1	0.10	0.17	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW324_220504	Normal	EM2208381	0.96	0.03	**1.20**	<0.02	<0.02	0.24	<0.02	<0.02	<0.1	0.04	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW324_221010	Normal	EM2220286	1.46	0.06	**1.96**	0.04	0.03	0.50	0.04	<0.02	<0.1	0.06	0.11	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	01 May 2023	0445_QC101_230501	Field_D	EM2308015	1.80	0.09	***2.44***	0.07	0.05	0.64	0.02	<0.02	<0.1	0.12	0.18	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC201_230501	Interlab_D	987797	2.1	0.08	***2.81***	0.05	0.05	0.71	0.03	<0.01	0.06	0.11	0.16	0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW324_230501	Normal	EM2308015	1.80	0.09	***2.46***	0.07	0.06	0.66	0.03	<0.02	<0.1	0.12	0.18	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW326	17 Nov 2021	0445_SW326_211117	Normal	EM2122998	7.99	0.38	***10.1***	0.22	0.19	2.14	0.22	0.07	0.2	0.37	0.63	0.19	0.04	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW326_220504	Normal	EM2208381	0.60	0.01	**0.69**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW326_221014	Normal	EM2220286	0.48	0.02	**0.65**	<0.02	<0.02	0.17	<0.02	<0.02	<0.1	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	01 May 2023	0445_SW326_230501	Normal	EM2308015	1.20	0.04	**1.37**	0.02	<0.02	0.17	<0.02	<0.02	<0.1	0.04	0.06	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW332	17 Oct 2017	0445S_SW332_0.05_171017	Normal	ES1726190	3.98	0.0496	***4.45***	0.149	0.0898	0.472	0.0436	0.0244	0.032	0.161	0.419	0.0302	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	17 Nov 2021	0445_SW332_211117	Normal	EM2122998	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW332_221014	Normal	EM2220286	0.04	<0.01	**0.10**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_SW332_230503	Normal	EM2308015	0.01	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW333	17 Oct 2017	0445S_SW333_0.05_171017	Normal	ES1726190	0.444	0.0136	**0.577**	0.0148	0.0162	0.133	0.0090	<0.0020	<0.002	0.0042	0.0360	0.0060	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	17 Nov 2021	0445_SW333_211117	Normal	EM2122998	0.44	0.03	**0.84**	0.07	0.05	0.40	<0.02	<0.02	<0.1	0.07	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW333_220504	Normal	EM2208381	0.11	<0.01	**0.13**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW333_221014	Normal	EM2220286	0.41	0.01	**0.58**	0.03	<0.02	0.17	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_SW333_230503	Normal	EM2308015	0.12	<0.01	**0.16**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**															
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***															
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																
SW336	18 Oct 2017	0445S_QC167_171018	Field_D	ES1726433	17.6	**0.850**	***19.8***	0.172	0.288	2.18	0.298	0.0452	0.044	0.352	1.93	0.324	0.347	0.137	0.0148	<0.0020	<0.0020	<0.0050
		0445S_QC267_171018	Interlab_D	569078	48	**1.2**	***50.7***	0.22	0.34	2.7	0.40	0.009	0.32	0.75	2.8	0.44	0.47	0.34	0.058	0.011	<0.001	<0.001
		0445S_SW336_0.1_171018	Normal	ES1726433	17.2	**0.899**	***19.6***	0.178	0.306	2.45	0.310	0.0396	0.055	0.446	2.30	0.382	0.348	0.136	0.0128	<0.0020	<0.0020	<0.0050
	15 Nov 2021	0445_SW336_211115	Normal	EM2122998	7.29	0.20	***7.71***	0.06	0.05	0.42	0.05	0.19	<0.1	0.10	0.26	0.10	0.15	0.16	0.10	0.02	<0.02	<0.05
	04 May 2022	0445_SW336_220504	Normal	EM2208381	7.64	0.35	***8.18***	0.14	0.11	0.54	0.04	0.96	<0.2	0.44	0.95	0.25	0.16	0.14	0.23	0.24	0.08	<0.09
	14 Oct 2022	0445_QC106_20221014	Field_D	EM2220286	4.70	0.17	***5.21***	0.05	0.05	0.51	0.08	0.07	<0.1	0.09	0.21	0.08	0.06	0.07	0.03	<0.02	<0.02	<0.05
		0445_QC206_221014	Interlab_D	932350	6.8	0.25	***7.6***	0.07	0.07	0.80	0.15	0.08	0.06	0.14	0.30	0.11	0.07	0.09	0.03	<0.01	<0.01	<0.01
		0445_SW336_221014	Normal	EM2220286	5.98	0.19	***6.63***	0.05	0.07	0.65	0.10	0.09	<0.1	0.10	0.23	0.08	0.06	0.08	0.04	<0.02	<0.02	<0.05
	04 May 2023	0445_SW336_230504	Normal	EM2308015	4.78	**0.57**	***5.93***	0.10	0.19	1.15	0.07	0.10	0.2	0.35	0.93	0.31	0.21	0.11	0.05	0.02	<0.02	<0.05
SW338	18 Oct 2017	0445S_SW338_0.2_171018	Normal	ES1726433	3.94	0.224	***5.28***	0.202	0.210	1.34	0.111	0.0042	0.024	0.179	0.806	0.0998	0.0276	0.0048	<0.0020	<0.0020	<0.0020	<0.0050
	10 Nov 2021	0445_SW338_211109	Normal	EM2122518	1.06	0.05	**1.31**	0.09	0.03	0.25	<0.02	<0.02	<0.1	0.04	0.16	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW338_220504	Normal	EM2208381	0.76	0.04	**1.00**	0.03	0.03	0.24	<0.02	<0.02	<0.1	0.04	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_QC207_221014	Interlab_D	932350	0.81	0.04	**1.03**	0.03	0.03	0.22	0.01	<0.01	<0.05	0.04	0.12	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW338_221014	Normal	EM2220286	0.53	0.03	**0.70**	0.03	0.02	0.17	<0.02	<0.02	<0.1	0.03	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_QC102_230502	Field_D	EM2308015	0.55	0.03	**0.75**	0.03	0.03	0.20	<0.02	<0.02	<0.1	0.03	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC202_230502	Interlab_D	987197	0.72	0.04	**0.91**	0.03	0.03	0.19	0.01	<0.01	<0.05	0.03	0.10	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW338_230502	Normal	EM2308015	0.53	0.03	**0.71**	0.03	0.02	0.18	<0.02	<0.02	<0.1	0.03	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW340	18 Oct 2017	0445S_SW340_0.03_171018	Normal	ES1726433	5.59	0.333	***6.80***	0.134	0.158	1.21	0.0960	0.0332	0.039	0.258	0.488	0.236	0.0956	0.0496	0.0144	0.0024	<0.0020	<0.0050
	10 Nov 2021	0445_SW340_211109	Normal	EM2122518	4.20	0.15	***5.86***	0.26	0.21	1.66	0.11	<0.02	0.2	0.28	0.44	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_QC108_20221014	Field_D	EM2220286	0.70	0.05	**0.91**	0.02	0.02	0.21	<0.02	<0.02	<0.1	0.03	0.06	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC208_221014	Interlab_D	932350	1.3	0.06	**1.59**	0.03	0.03	0.29	0.02	<0.01	<0.05	0.05	0.09	0.04	0.03	0.02	<0.01	<0.01	<0.01	<0.01
		0445_SW340_221014	Normal	EM2220286	0.76	0.05	**0.98**	0.02	0.02	0.22	<0.02	<0.02	<0.1	0.03	0.07	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW340_230502	Normal	EM2308015	1.20	0.09	**1.50**	<0.02	0.03	0.30	0.02	<0.02	<0.1	0.03	0.08	0.07	0.03	<0.02	<0.02	<0.02	<0.02	<0.05
SW346	12 Oct 2017	0445S_SW346_0.2_171013	Normal	ES1725991	1.42	0.0634	**1.95**	0.0841	0.0844	0.526	0.0294	<0.0005	<0.002	0.110	0.150	0.0496	0.0206	0.0068	0.0014	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_SW346_211117	Normal	EM2122998	0.73	0.04	**0.94**	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.07	0.08	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW346_220504	Normal	EM2208381	0.69	0.04	**0.86**	0.04	<0.02	0.17	<0.02	<0.02	<0.1	0.04	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW346_221014	Normal	EM2220286	0.77	0.04	**1.07**	0.05	0.04	0.30	0.02	<0.02	<0.1	0.05	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW346_230505	Normal	EM2308015	0.67	0.03	**0.83**	0.03	0.02	0.16	<0.02	<0.02	<0.1	0.05	0.06	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW349	12 Oct 2017	0445S_QC159_171012	Field_D	ES1725991	0.854	0.0616	**1.33**	0.112	0.0908	0.479	0.0227	<0.0005	<0.002	0.124	0.166	0.0475	0.0164	0.0033	0.0009	<0.0005	<0.0005	<0.0005
	13 Oct 2017	0445S_SW349_0.5_171013	Normal	ES1725991	0.950	0.0476	**1.51**	0.104	0.0845	0.560	0.0216	<0.0005	<0.002	0.112	0.150	0.0399	0.0120	0.0026	0.0007	<0.0005	<0.0005	<0.0005
	15 Nov 2021	0445_QC206_211115	Interlab_D	842787	0.84	0.05	**1.06**	0.04	0.03	0.22	0.01	<0.01	0.08	0.07	0.10	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	16 Nov 2021	0445_QC106_211115	Field_D	EM2122998	0.55	0.04	**0.73**	0.05	0.02	0.18	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_SW349_211115	Normal	EM2122998	0.61	0.04	**0.82**	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW349_220504	Normal	EM2208381	0.48	0.02	**0.61**	0.03	<0.02	0.13	<0.02	<0.02	<0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW349_221014	Normal	EM2220286	0.47	0.03	**0.63**	0.03	0.02	0.16	<0.02	<0.02	<0.1	0.04	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW349_230502	Normal	EM2308015	0.46	0.02	**0.59**	0.03	<0.02	0.13	<0.02	<0.02	<0.1	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW355	13 Oct 2017	0445S_SW355_0.5_171013	Normal	ES1725991	0.325	0.0133	**0.533**	0.143	0.0294	0.208	0.0065	<0.0005	<0.002	0.0279	0.0420	0.0111	0.0039	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_QC107_211117	Field_D	EM2122998	0.21	0.02	**0.29**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	17 Nov 2021	0445_QC207_211117	Interlab_D	842787	0.29	0.02	**0.39**	0.02	0.01	0.10	<0.01	<0.01	<0.05	0.03	0.04	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW355_211117	Normal	EM2122998	0.22	0.01	**0.30**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_QC204_220504	Interlab_D	886780	0.27	<0.01	**0.32**	0.01	<0.01	0.05	<0.01	<0.01	<0.05	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW355_220504	Normal	EM2208381	0.11	<0.01	**0.13**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	07 May 2022	0445_QC104_220504	Field_D	EM2208381	0.19	0.01	**0.24**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW355_221014	Normal	EM2220286	0.21	<0.01	**0.28**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW355_230504	Normal	EM2308015	0.13	<0.01	**0.17**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW370	23 Oct 2017	0445N_SW370_0.01_171023	Normal	ES1726698	0.166	0.0213	**0.326**	0.0255	0.0591	0.160	0.0121	<0.0005	0.018	0.0284	0.0307	0.0176	0.0069	0.0018	<0.0005	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_SW370_211117	Normal	EM2122998	0.22	0.01	**0.30**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW370_220506	Normal	EM2208381	0.10	<0.01	**0.13**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_QC109_20221015	Field_D	EM2220286	0.14	<0.01	**0.20**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC209_221015	Interlab_D	932350	0.19	<0.01	**0.27**	<0.01	<0.01	0.08	<0.01	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW370_221015	Normal	EM2220286	0.14	<0.01	**0.20**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW370_230504	Normal	EM2308015	0.09	<0.01	**0.12**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW374	23 Oct 2017	0445N_SW374_0.1_171023	Normal	ES1726698	0.201	0.0228	**0.340**	0.0293	0.0378	0.139	0.0108	<0.0005	<0.002	0.0294	0.0324	0.0156	0.0057	0.0010	<0.0005	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_SW374_211117	Normal	EM2122998	0.13	<0.01	**0.17**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW374_220506	Normal	EM2208381	0.05	<0.01	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW374_221014	Normal	EM2220286	0.08	<0.01	**0.12**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW374_230505	Normal	EM2308015	0.08	<0.01	**0.10**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW375	23 Oct 2017	0445N_QC128_171023	Field_D	ES1726698	0.166	0.0190	**0.294**	0.0274	0.0267	0.128	0.0089	<0.0005	0.019	0.0232	0.0267	0.0156	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445N_QC228_171023	Interlab_D	569535	0.19	0.015	**0.29**	0.021	0.013	0.10	0.003	<0.001	0.019	0.035	0.039	0.012	0.003	0.001	<0.001	<0.001	<0.001	<0.001
		0445N_SW375_0.1_171023	Normal	ES1726698	0.150	0.0197	**0.270**	0.0227	0.0245	0.120	0.0092	<0.0005	0.015	0.0253	0.0317	0.0162	0.0046	0.0012	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_QC105_180801	Field_D	ES1823003	0.0623	0.0075	**0.104**	0.0068	0.0038	0.0415	0.0019	<0.0005	<0.002	<0.0005	0.0089	0.0053	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC205_180801	Interlab_D	611290	0.070	0.006	**0.101**	0.004	0.003	0.031	0.002	<0.001	0.006	0.005	0.012	0.005	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		0445_SW375_0.2_180801	Normal	ES1823003	0.0644	0.0074	**0.106**	0.0046	0.0029	0.0419	0.0016	<0.0005	<0.002	0.0025	0.0101	0.0076	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_SW375_211117	Normal	EM2122998	0.09	<0.01	**0.15**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW375_220506	Normal	EM2208381	0.06	<0.01	**0.08**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW375_221012	Normal	EM2220286	0.05	<0.01	**0.08**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW375_230505	Normal	EM2308015	0.05	<0.01	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

					Perfluorocarbons																
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**														
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***														
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220															
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19															
SW379	16 Nov 2021	0445_SW379_211116	Normal	EM2122998	0.41	0.02	**0.58**	0.15	0.04	0.17	<0.02	0.02	0.1	0.07	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW379_221014	Normal	EM2220286	0.12	<0.01	**0.15**	0.03	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW380	10 Nov 2021	0445_SW380_211108	Normal	EM2122518	0.34	<0.01	**0.43**	0.06	0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW380_221014	Normal	EM2220286	0.18	<0.01	**0.20**	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW380_230506	Normal	EM2308015	0.10	<0.01	**0.11**	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW382	24 Oct 2017	0445E_QC131_171024	Field_D	ES1726816	0.101	0.0039	**0.120**	0.0066	0.0043	0.0187	0.0026	<0.0005	<0.002	0.0064	0.0155	0.0028	0.0008	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
		0445E_SW382_0.1_171024	Normal	ES1726816	0.107	0.0042	**0.130**	0.0074	0.0046	0.0225	0.0026	<0.0005	<0.002	0.0061	0.0157	0.0028	0.0008	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_QC109_211116	Field_D	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC209_211116	Interlab_D	842787	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	17 Nov 2021	0445_SW382_211116	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW382_220503	Normal	EM2208381	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	13 Oct 2022	0445_SW382_221013	Normal	EM2220286	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW382_230505	Normal	EM2308015	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW387	25 Oct 2017	0445E_SW387_0.2_171025	Normal	ES1726955	0.0530	0.0038	**0.157**	0.0273	0.0157	0.104	0.0045	<0.0005	<0.002	0.0030	0.0074	0.0021	0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW387_211116	Normal	EM2122998	0.06	<0.01	**0.21**	0.03	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_QC101_220503	Field_D	EM2208381	0.04	<0.01	**0.12**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC201_220503	Interlab_D	886780	0.04	<0.01	**0.1**	0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW387_220503	Normal	EM2208381	0.05	<0.01	**0.10**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW387_221012	Normal	EM2220286	0.13	<0.01	**0.26**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW387_230506	Normal	EM2308015	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW388	25 Oct 2017	0445E_SW388_0.2_171025	Normal	ES1726955	0.175	0.0046	**0.343**	0.0326	0.0200	0.168	0.0054	<0.0020	<0.002	<0.0020	0.0102	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW388_211116	Normal	EM2122998	0.28	<0.01	**0.48**	0.04	<0.02	0.20	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	16 May 2022	0445S_SW388_220516	Normal	EM2209833	0.25	0.02	**0.84**	0.1	0.07	0.59	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW388_221210	Normal	EM2220286	0.07	<0.01	**0.12**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW390	13 Oct 2017	0445_SW390_0.5_171013	Normal	ES1725997	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	31 Jul 2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW390_0.5_181126	Normal	ES1835585	0.0005	<0.0005	0.0010	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	09 Nov 2021	0445_SW390_211109	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW390_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW390_221011	Normal	EM2220271	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW390_230504	Normal	EM2308009	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW393	16 Oct 2017	0445_SW393_0.1_171016	Normal	ES1726004	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW393_0.2_181127	Normal	ES1835585	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW393_211116	Normal	EM2122999	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW393_220506	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Nov 2022	0445_SW393_221110	Normal	EM2222367	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW393_230504	Normal	EM2308009	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW395	09 Oct 2017	0445_QC153_171009	Field_D	ES1725705	0.0737	0.0022	**0.196**	0.0274	0.0154	0.122	0.0025	<0.0005	<0.002	<0.0005	0.0067	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC253_171010	Interlab_D	567888	0.094	0.004	**0.214**	0.018	0.020	0.12	0.003	<0.001	0.005	0.002	0.006	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		0445_SW395_0.5_171010	Normal	ES1725705	0.0925	0.0022	**0.224**	0.0296	0.0164	0.132	0.0034	<0.0005	<0.002	<0.0005	0.0088	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW395_0.5_191103	Normal	ES1936497	0.0688	0.0036	**0.126**	0.0092	0.0072	0.0570	0.0038	<0.0020	<0.002	<0.0020	0.0052	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW395_211116	Normal	EM2122999	0.09	<0.01	**0.19**	0.03	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	09 May 2022	0445_SW395_220509	Normal	EM2208629	0.04	<0.01	**0.10**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Nov 2022	0445_SW395_221110	Normal	EM2222367	0.18	<0.01	**0.38**	0.03	0.02	0.20	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW395_230506	Normal	EM2308009	0.03	<0.01	0.06	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW396	10 Oct 2017	0445_SW396_0.5_171010	Normal	ES1725715	0.434	0.0250	**1.91**	0.214	0.160	1.48	0.0256	<0.0005	<0.002	<0.0005	0.189	0.0182	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW396_0.5_180802	Normal	ES1823005	0.596	0.0914	***2.24***	0.394	0.316	1.64	0.0643	<0.0005	<0.002	0.113	0.281	0.0901	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW396_0.5_191103	Normal	ES1936497	0.549	0.0356	**1.66**	0.153	0.157	1.11	0.0488	<0.0020	<0.002	<0.0020	0.129	0.0182	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW396_211116	Normal	EM2122968	0.44	0.04	**1.51**	0.16	0.11	1.07	0.03	<0.02	<0.1	0.04	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW396_220503	Normal	EM2208382	0.57	0.05	***2.22***	0.21	0.19	1.65	0.05	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW396_221012	Normal	EM2220270	0.42	0.02	**1.10**	0.09	0.08	0.68	0.02	<0.02	<0.1	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW396_230506	Normal	EM2308004	0.49	0.04	**1.63**	0.14	0.18	1.14	0.05	<0.02	<0.1	0.04	0.17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW397	10 Oct 2017	0445_SW397_0.5_171010	Normal	ES1725715	5.74	0.434	***12.8***	1.21	1.06	7.02	0.390	<0.0005	0.025	0.225	1.88	0.224	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_SW397_1.0_171010	Normal	ES1725715	5.38	0.433	***12.3***	1.17	1.06	6.96	0.382	<0.0005	0.018	0.231	1.76	0.239	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_SW397_1.3_171010	Normal	ES1725715	5.61	0.462	***12.7***	1.17	1.09	7.12	0.371	<0.0005	0.024	0.217	1.85	0.211	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW397_0.5_180802	Normal	ES1823005	2.86	0.361	***7.52***	0.608	0.821	4.66	0.307	<0.0005	0.054	0.191	0.932	0.157	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_QC125_181126	Field_D	ES1835587	3.22	0.336	***7.36***	0.696	0.544	4.14	0.263	<0.0005	0.051	0.222	1.05	0.191	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC225_181126	Interlab_D	630629	5.8	0.47	***11***	0.87	1.3	5.6	0.37	<0.001	0.21	0.33	1.3	0.30	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
		0445_SW397_0.5_181126	Normal	ES1835587	3.84	0.362	***8.90***	0.773	0.711	5.06	0.282	<0.0005	0.051	0.236	1.14	0.206	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_QC135_191103	Field_D	ES1936497	4.43	0.383	***9.50***	0.801	1.05	5.07	0.394	<0.0020	0.077	0.289	1.19	0.215	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
		0445_SW397_0.5_191103	Normal	ES1936497	4.27	0.348	***9.44***	0.738	0.980	5.17	0.364	<0.0020	0.079	0.259	1.08	0.191	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW397_211116	Normal	EM2122968	3.32	0.30	***6.64***	0.57	0.51	3.32	0.26	<0.02	0.2	0.23	0.72	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW397_220503	Normal	EM2208382	3.99	0.34	***8.31***	0.64	0.68	4.32	0.30	<0.02	0.1	0.27	0.87	0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW397_221012	Normal	EM2220270	3.23	0.24	***6.53***	0.50	0.51	3.30	0.24	<0.02	<0.1	0.18	0.75	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW397_230506	Normal	EM2308004	2.79	0.28	***6.20***	0.58	0.62	3.41	0.24	<0.02	0.1	0.20	0.87	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**															
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***															
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																
SW398	12 Oct 2017	0445_SW398_0.5_171012	Normal	ES1725997	0.0009	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW398_0.5_181126	Normal	ES1835585	0.0004	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW398_211116	Normal	EM2122999	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW398_220503	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW398_221012	Normal	EM2220270	0.04	<0.01	**0.08**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW398_230506	Normal	EM2308009	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW400	10 Oct 2017	0445_SW400_0.3_171010	Normal	ES1725715	0.178	0.0225	**0.826**	0.164	0.103	0.648	0.0164	<0.0005	<0.002	0.0082	0.119	0.0150	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_QC106_180802	Field_D	ES1823005	0.0992	0.0103	**0.228**	0.0340	0.0310	0.129	0.0084	<0.0005	<0.002	<0.0005	0.0179	0.0063	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC206_180802	Interlab_D	611294	0.15	0.012	**0.35**	0.027	0.034	0.20	0.012	<0.001	0.007	0.004	0.028	0.006	<0.001	0.001	0.002	<0.001	<0.001	<0.001
		0445_SW400_0.2_180802	Normal	ES1823005	0.113	0.0118	**0.283**	0.0237	0.0283	0.170	0.0097	<0.0005	<0.002	0.0063	0.0240	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW400_0.2_191103	Normal	ES1936497	0.110	0.0084	**0.246**	0.0232	0.0218	0.136	0.0066	<0.0020	<0.002	<0.0020	0.0172	0.0032	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW400_211116	Normal	EM2122968	0.70	0.06	**1.51**	0.26	0.13	0.81	0.06	<0.02	<0.1	0.05	0.14	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW400_220503	Normal	EM2208382	0.22	0.02	**0.55**	0.07	0.05	0.33	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW400_221012	Normal	EM2220270	0.25	0.02	**0.57**	0.06	0.05	0.32	0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW400_230506	Normal	EM2308004	0.14	0.01	**0.32**	0.02	0.03	0.18	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW401	10 Oct 2017	0445_SW401_0.4_171010	Normal	ES1725715	0.179	0.0229	**0.687**	0.143	0.0922	0.508	0.0138	<0.0005	<0.002	0.0087	0.118	0.0113	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW401_0.2_191103	Normal	ES1936497	0.0928	0.0074	**0.217**	0.0238	0.0202	0.124	0.0060	<0.0020	<0.002	<0.0020	0.0142	0.0024	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW401_211116	Normal	EM2122968	0.32	0.04	**0.85**	0.15	0.08	0.53	0.03	<0.02	<0.1	0.03	0.11	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW401_220503	Normal	EM2208382	0.18	0.02	**0.51**	0.07	0.06	0.33	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW401_221012	Normal	EM2220270	0.10	<0.01	**0.26**	0.05	0.02	0.16	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW401_230506	Normal	EM2308004	0.11	0.01	**0.33**	0.05	0.05	0.22	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW403	12 Oct 2017	0445_SW403_0.5_171012	Normal	ES1725997	0.0532	0.0063	**0.224**	0.0389	0.0325	0.171	0.0019	<0.0005	<0.002	<0.0005	0.0279	0.0041	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW403_211112	Normal	EM2122519	0.26	0.02	**0.59**	0.09	0.07	0.33	<0.02	<0.02	<0.1	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW403_220505	Normal	EM2208383	0.20	0.02	**0.58**	0.11	0.08	0.38	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW403_221015	Normal	EM2220271	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW403_230505	Normal	EM2308009	0.12	<0.01	**0.25**	0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW404	11 Oct 2017	0445_SW404_0.5_171011	Normal	ES1725716	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW404_0.52_181126	Normal	ES1835585	0.0025	<0.0005	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW404_211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	17 Nov 2021	0445_SW404_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW404_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW404_221015	Normal	EM2220271	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW404_230504	Normal	EM2308009	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW405	12 Oct 2017	0445_SW405_0.2_171012	Normal	ES1725997	0.0481	0.0046	**0.230**	0.0386	0.0339	0.182	0.0016	<0.0005	<0.002	<0.0005	0.0214	0.0027	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW405_0.1_180802	Normal	ES1823003	0.0401	0.0021	**0.0997**	0.0069	0.0053	0.0596	0.0022	<0.0005	<0.002	<0.0005	0.0013	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW405_211112	Normal	EM2122519	0.16	0.02	**0.51**	0.08	0.07	0.35	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW405_220505	Normal	EM2208383	0.08	<0.01	**0.13**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW405_221015	Normal	EM2220271	0.02	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW405_230506	Normal	EM2308009	0.05	<0.01	**0.11**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW409	14 Feb 2018	0445_SW409_0.0_180214	Normal	ES1805190	0.0947	0.0062	**0.115**	0.0026	0.0020	0.0204	0.0016	<0.0005	<0.002	0.0034	0.0048	0.0017	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW409_211112	Normal	EM2122519	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW409_220506	Normal	EM2208383	0.04	<0.01	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW409_221015	Normal	EM2220271	0.06	<0.01	**0.09**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW409_230504	Normal	EM2308009	0.04	<0.01	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW412	12 Oct 2017	0445_SW412_0.5_171012	Normal	ES1725997	0.0482	0.0037	**0.213**	0.0245	0.0201	0.165	0.0010	<0.0005	<0.002	<0.0005	0.0065	0.0025	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW412_0.1_180802	Normal	ES1823003	0.0384	0.0051	0.0674	0.0050	0.0022	0.0290	0.0011	<0.0005	<0.002	<0.0005	0.0064	0.0031	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_QC126_181126	Field_D	ES1835585	0.0406	0.0037	0.0588	0.0028	0.0020	0.0182	<0.0005	<0.0005	<0.002	0.0020	0.0064	0.0016	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
		0445_SW412_0.2_181126	Normal	ES1835585	0.0383	0.0036	0.0569	0.0026	0.0019	0.0186	<0.0005	<0.0005	<0.002	0.0019	0.0068	0.0014	0.0008	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW412_211112	Normal	EM2122519	0.04	<0.01	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW412_220506	Normal	EM2208383	0.04	<0.01	**0.11**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW412_221015	Normal	EM2220271	0.02	<0.01	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW412_230505	Normal	EM2308009	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW416	11 Oct 2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW416_0.5_181126	Normal	ES1835585	0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW416_211111	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW416_220505	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW416_221012	Normal	EM2220271	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW416_230504	Normal	EM2308009	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW424	10 Oct 2017	0445_QC213	Interlab_D	567942	3.3	0.13	***5.1***	0.16	0.22	1.8	0.10	<0.01	0.10	0.11	0.36	0.08	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
	11 Oct 2017	0445_QC113	Field_D	ES1725716	2.52	0.0623	***4.85***	0.131	0.126	2.33	0.0687	<0.0005	0.011	0.0752	0.435	0.0445	0.0115	0.0016	0.0006	<0.0005	<0.0005	<0.0005
		0445_SW424_0.1_171011	Normal	ES1725716	2.12	0.0607	***4.14***	0.136	0.133	2.02	0.0714	<0.0005	0.010	0.0731	0.371	0.0429	0.0109	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
	13 Oct 2017	0445_SW424_0.1_171013	Normal	ES1725997	0.706	0.0247	**1.33**	0.0590	0.0626	0.622	0.0142	<0.0005	<0.002	0.0475	0.103	0.0219	0.0060	0.0011	<0.0005	<0.0005	<0.0005	<0.0005
	15 Nov 2021	0445_QC208_211115	Interlab_D	842787	1.1	0.04	**1.83**	0.03	0.05	0.73	0.03	<0.01	0.06	0.04	0.10	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	16 Nov 2021	0445_SW424_211115	Normal	EM2122999	0.76	0.03	**1.16**	0.04	0.02	0.40	0.02	<0.02	<0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	07 May 2022	0445_SW424_220504	Normal	EM2208383	0.80	0.02	**1.28**	0.03	0.04	0.48	0.03	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW424_221011	Normal	EM2220271	0.78	0.01	**0.97**	0.02	<0.02	0.19	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW424_230502	Normal	EM2308009	0.84	0.02	**1.30**	0.03	0.03	0.46	<0.02	<0.02	<0.1	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**															
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***															
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																
SW427	16 Oct 2017	0445_SW427_0.0_171016	Normal	ES1726004	0.111	0.0030	**0.133**	0.0045	0.0026	0.0222	0.0018	<0.0005	<0.002	0.0021	0.0046	0.0016	0.0009	0.0008	<0.0005	<0.0005	<0.0005	<0.0005
	15 Nov 2021	0445_SW427_211115	Normal	EM2122999	0.19	<0.01	**0.25**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW427_220506	Normal	EM2208383	0.03	<0.01	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW427_221011	Normal	EM2220271	0.40	0.01	**0.53**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW427_230504	Normal	EM2308009	0.37	0.01	**0.51**	<0.02	<0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW430	16 Oct 2017	0445_SW430_0.1_171016	Normal	ES1726004	0.0465	0.0036	0.0618	0.0010	0.0025	0.0153	0.0008	<0.0005	<0.002	<0.0005	0.0042	0.0015	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW430_0.1_180802	Normal	ES1823003	0.0199	0.0039	0.0364	<0.0005	0.0011	0.0165	0.0005	<0.0005	<0.002	<0.0005	0.0042	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW430_211115	Normal	EM2122999	0.10	<0.01	**0.16**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW430_220506	Normal	EM2208383	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW430_221011	Normal	EM2220271	0.13	<0.01	**0.17**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW430_230504	Normal	EM2308009	0.13	<0.01	**0.19**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW431	16 Oct 2017	0445_SW431_0.1_171016	Normal	ES1726004	0.0525	0.0032	**0.0732**	<0.0005	0.0026	0.0207	0.0010	<0.0005	<0.002	<0.0005	0.0044	0.0013	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW431_211116	Normal	EM2122999	0.07	<0.01	**0.10**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW431_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW431_221011	Normal	EM2220271	0.14	<0.01	**0.19**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW431_230502	Normal	EM2308009	0.03	<0.01	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW432	16 Oct 2017	0445_SW432_0.1_171016	Normal	ES1726004	0.0545	0.0044	**0.0769**	<0.0005	0.0023	0.0224	0.0010	<0.0005	<0.002	<0.0005	0.0055	0.0019	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW432_211116	Normal	EM2122999	0.05	<0.01	**0.08**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW432_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW432_221011	Normal	EM2220271	0.06	<0.01	**0.09**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW432_230504	Normal	EM2308009	0.04	<0.01	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW434	09 Oct 2017	0445_SW434_0.5_171011	Normal	ES1725705	0.0038	<0.0005	0.0045	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	15 Nov 2021	0445_SW434_211115	Normal	EM2122999	0.05	<0.01	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW434_220506	Normal	EM2208383	0.02	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW434_221011	Normal	EM2220271	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW434_230502	Normal	EM2308009	0.03	<0.01	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW448	20 Oct 2017	0445S_SW448_0.1_171020	Normal	ES1726682	1.41	0.0428	***2.38***	0.108	0.0448	0.965	0.104	<0.0005	0.015	0.179	0.111	0.0549	0.0207	0.0026	0.0042	0.0005	0.0021	<0.0005
	16 Nov 2021	0445_SW448_211115	Normal	EM2122998	2.09	0.07	***3.23***	0.06	0.05	1.14	0.04	<0.02	<0.1	0.12	0.25	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW448_221014	Normal	EM2220286	0.31	<0.01	**0.43**	<0.02	<0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_QC104_230503	Field_D	EM2308015	1.28	0.03	**1.88**	0.04	0.03	0.60	0.02	<0.02	<0.1	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC204_230503	Interlab_D	987797	1.5	0.03	***2.07***	0.03	0.03	0.57	0.02	<0.01	<0.05	0.04	0.08	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW448_230503	Normal	EM2308015	1.23	0.03	**1.81**	0.04	0.03	0.58	<0.02	<0.02	<0.1	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW462	23 Nov 2017	0445_SW462_0.1_171123	Normal	ES1729741	0.0617	0.0059	**0.117**	0.0122	0.0159	0.0552	0.0044	<0.0005	<0.002	<0.0005	0.0123	0.0031	0.0011	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW462_0.2_180801	Normal	ES1823003	0.0265	0.0035	0.0481	<0.0005	0.0017	0.0216	0.0008	<0.0005	<0.002	<0.0005	0.0045	0.0016	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	11 Nov 2021	0445_SW462_211111	Normal	EM2122518	0.08	<0.01	**0.19**	0.03	0.02	0.11	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_QC205_220505	Interlab_D	886780	0.04	<0.01	0.06	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW462_220505	Normal	EM2208383	0.03	<0.01	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	07 May 2022	0445_QC105_220505	Field_D	EM2208383	0.02	<0.01	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW462_221011	Normal	EM2220271	<0.01	<0.01	0.01	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW462_230504	Normal	EM2308009	0.04	<0.01	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW463	11 Dec 2017	0445_SW463_0.1_171211	Normal	ES1731468	0.540	0.119	**1.03**	0.0266	0.0392	0.490	0.0108	<0.0005	<0.002	0.0448	0.206	0.0173	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0060
	16 Nov 2021	0445_SW463_211115	Normal	EM2122999	1.36	0.04	***2.10***	0.05	0.03	0.74	0.04	<0.02	<0.1	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW463_220504	Normal	EM2208383	0.99	0.02	**1.41**	0.04	0.02	0.42	0.02	<0.02	<0.1	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_QC101_221011	Field_D	EM2220271	1.00	0.05	**1.49**	0.03	0.03	0.49	0.02	<0.02	<0.1	0.06	0.10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC201_221011	Interlab_D	932350	1.7	0.06	***2.35***	0.04	0.03	0.65	0.04	<0.01	0.07	0.09	0.14	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW463_221011	Normal	EM2220271	1.02	0.05	**1.51**	0.03	0.03	0.49	0.02	<0.02	<0.1	0.06	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW463_230502	Normal	EM2308009	0.30	<0.01	**0.37**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW470	02 Aug 2018	0445_SW470_0.5_180802	Normal	ES1823003	0.160	0.0048	**0.330**	0.0223	0.0153	0.170	0.0057	<0.0005	<0.002	<0.0005	0.0066	0.0028	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW470_0.5_191103	Normal	ES1936497	0.179	0.0052	**0.388**	0.0258	0.0264	0.209	0.0074	<0.0020	<0.002	<0.0020	0.0072	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW470_211116	Normal	EM2122999	0.06	<0.01	**0.13**	0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW470_220503	Normal	EM2208383	0.19	<0.01	**0.42**	0.03	0.03	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_QC203_220504	Interlab_D	886780	0.54	0.03	**0.67**	0.03	0.02	0.13	<0.01	<0.01	<0.05	0.04	0.04	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	07 May 2022	0445_QC103_220504	Field_D	EM2208381	0.46	0.02	**0.61**	0.02	<0.02	0.15	<0.02	<0.02	<0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW470_221012	Normal	EM2220270	0.04	<0.01	**0.08**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW470_230506	Normal	EM2308009	0.11	<0.01	**0.21**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW471	02 Aug 2018	0445_SW471_0.2_180802	Normal	ES1823005	0.257	0.0312	**1.14**	0.306	0.192	0.881	0.0351	<0.0005	<0.002	0.0536	0.138	0.0319	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW471_0.5_191103	Normal	ES1936497	0.690	0.0844	***2.55***	0.414	0.391	1.86	0.0810	<0.0020	<0.002	0.0800	0.316	0.0508	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW471_211116	Normal	EM2122968	0.81	0.06	**1.82**	0.23	0.15	1.01	0.07	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW471_220503	Normal	EM2208382	1.14	0.15	***3.44***	0.45	0.40	2.30	0.12	<0.02	<0.1	0.14	0.46	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW471_221012	Normal	EM2220270	0.64	0.04	**1.40**	0.12	0.11	0.76	0.04	<0.02	<0.1	0.04	0.12	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW471_ 230506	Normal	EM2308004	0.32	0.03	**0.80**	0.08	0.09	0.48	0.02	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW487	02 Aug 2018	0445_SW487_0.01_180802	Normal	ES1823005	6.26	0.383	***9.09***	0.541	0.536	2.83	0.350	<0.0005	0.041	0.191	0.671	0.179	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW487_211116	Normal	EM2122968	3.45	0.30	***6.82***	0.60	0.57	3.37	0.27	<0.02	0.2	0.21	0.69	0.18	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW487_220503	Normal	EM2208382	4.13	0.32	***7.71***	0.64	0.61	3.58	0.29	<0.02	0.1	0.25	0.86	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW487_221012	Normal	EM2220270	4.09	0.22	***7.21***	0.48	0.48	3.12	0.26	<0.02	<0.1	0.15	0.61	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW487_ 230506	Normal	EM2308004	2.84	0.28	***6.16***	0.57	0.61	3.32	0.25	<0.02	0.1	0.20	0.85	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of lowest adopted screening criteria in latest monitoring round

					Perfluorooctane Sulfonamide (FOSA)	N-Methyl perfluorooctane Sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane Sulfonamide (EtFOSA)	N-Ethyl perfluorooctane Sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane Sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane Sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer Sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
Location Code	Date	Field ID	Sample Type	Lab Report Number														
SW307	17 Nov 2021	0445_SW307_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17		
	14 Oct 2022	0445_SW307_221013	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.27		
SW310	17 Nov 2021	0445_SW310_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.32		
	10 Oct 2022	0445_SW310_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.58		
	03 May 2023	0445_SW310_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12		
SW311	17 Nov 2021	0445_SW311_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.37		
	10 Oct 2022	0445_QC100_20221010	Field_D	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.85		
		0445_QC200_221010	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	3.71	1.3	2.5
		0445_SW311_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.27		
	06 May 2023	0445_SW311_230506	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20		
SW313	17 Nov 2021	0445_QC111_211117	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.87		
		0445_QC211_211117	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	8.14	4.85	6.45
		0445_SW313_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.10		
	10 Oct 2022	0445_SW313_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.33		
	01 May 2023	0445_SW313_230501	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.04		
SW316	17 Oct 2017	0445S_SW316_0.1_171017	Normal	ES1726190	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	1.26		
	17 Nov 2021	0445_SW316_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.24		
	16 May 2022	0445S_SW316_220516	Normal	EM2209833	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.23		
	10 Oct 2022	0445_SW316_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.60		
	03 May 2023	0445_QC103_230503	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21		
		0445_QC203_230503	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.23	0.14	0.21
		0445_SW316_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18		
SW321	17 Nov 2021	0445_QC112_211117	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.21		
		0445_QC212_211117	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	11.64	7.61	10.41
		0445_SW321_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.75		
	04 May 2022	0445_SW321_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.47		
	10 Oct 2022	0445_SW321_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.12		
	01 May 2023	0445_QC100_230501	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.22		
		0445_QC200_230501	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	5.58	4.73	5.35
		0445_SW321_230501	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.92		
SW322	17 Nov 2021	0445_SW322_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.34		
	04 May 2022	0445_SW322_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.42		
	10 Oct 2022	0445_SW322_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.00		
	04 May 2023	0445_SW322_230504	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.01		
SW323	17 Oct 2017	0445S_SW323_0.2_171017	Normal	ES1726190	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	0.005	<0.002	<0.002	<0.002	1.65		
	17 Nov 2021	0445_SW323_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09		
	04 May 2022	0445_SW323_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.97		
	10 Oct 2022	0445_SW323_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.94		
	04 May 2023	0445_SW323_230504	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.02		
SW324	20 Oct 2017	0445S_SW324_0.1_171020	Normal	ES1726682	0.0039	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.015	0.003	<0.001	2.86		
	17 Nov 2021	0445_QC110_211117	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.73		
		0445_QC210_211117	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	4.43	2.71	3.71
		0445_SW324_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.20		
	04 May 2022	0445_SW324_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.33		
	10 Oct 2022	0445_SW324_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.33		
	01 May 2023	0445_QC101_230501	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.04		
		0445_QC201_230501	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	3.44	2.18	2.89
		0445_SW324_230501	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.07		
SW326	17 Nov 2021	0445_SW326_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.49	0.11	<0.05	13.2		
	04 May 2022	0445_SW326_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.76		
	14 Oct 2022	0445_SW326_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.73		
	01 May 2023	0445_SW326_230501	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.55		
SW332	17 Oct 2017	0445S_SW332_0.05_171017	Normal	ES1726190	0.0164	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	5.47		
	17 Nov 2021	0445_SW332_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
	14 Oct 2022	0445_SW332_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
	03 May 2023	0445_SW332_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
SW333	17 Oct 2017	0445S_SW333_0.05_171017	Normal	ES1726190	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.680		
	17 Nov 2021	0445_SW333_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.19		
	04 May 2022	0445_SW333_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13		
	14 Oct 2022	0445_SW333_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.67		
	03 May 2023	0445_SW333_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16		

					Perfluorooctane Sulfonamide (FOSA)	N-Methyl perfluorooctane Sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane Sulfonamide (EtFOSA)	N-Ethyl perfluorooctane Sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane Sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane Sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer Sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
SW336	18 Oct 2017	0445S_QC167_171018	Field_D	ES1726433	0.0132	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	0.006	0.930	1.30	0.020	26.8		
		0445S_QC267_171018	Interlab_D	569078	0.042	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.92	1.9	0.018	60.943		
		0445S_SW336_0.1_171018	Normal	ES1726433	0.0126	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	0.006	1.03	1.27	0.016	27.4		
	15 Nov 2021	0445_SW336_211115	Normal	EM2122998	0.03	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.35	0.83	0.14	10.5		
	04 May 2022	0445_SW336_220504	Normal	EM2208381	0.11	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.90	1.44	1.19	15.9		
	14 Oct 2022	0445_QC106_20221014	Field_D	EM2220286	0.04	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.25	0.47	<0.05	6.93		
		0445_QC206_221014	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.33	0.58	0.04	10.12	7.05	7.85
		0445_SW336_221014	Normal	EM2220286	0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.27	0.53	<0.05	8.57		
	04 May 2023	0445_SW336_230504	Normal	EM2308015	0.03	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.28	0.77	0.16	11.4		
SW338	18 Oct 2017	0445S_SW338_0.2_171018	Normal	ES1726433	0.0046	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	7.18		
	10 Nov 2021	0445_SW338_211109	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.70		
	04 May 2022	0445_SW338_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.25		
	14 Oct 2022	0445_QC207_221014	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.33	0.85	1.07
		0445_SW338_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.91		
	02 May 2023	0445_QC102_230502	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.98		
		0445_QC202_230502	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.17	0.76	0.95
		0445_SW338_230502	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.92		
SW340	18 Oct 2017	0445S_SW340_0.03_171018	Normal	ES1726433	0.0110	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	0.180	0.410	0.045	9.38		
	10 Nov 2021	0445_SW340_211109	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.61		
	14 Oct 2022	0445_QC108_20221014	Field_D	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.14		
		0445_QC208_221014	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.05	0.03	<0.01	2.05	1.36	1.65
		0445_SW340_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.22		
	02 May 2023	0445_SW340_230502	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.85		
SW346	12 Oct 2017	0445S_SW346_0.2_171013	Normal	ES1725991	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.052	0.037	0.001	2.64		
	17 Nov 2021	0445_SW346_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.23		
	04 May 2022	0445_SW346_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.05		
	14 Oct 2022	0445_SW346_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.37		
	05 May 2023	0445_SW346_230505	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.04		
SW349	12 Oct 2017	0445S_QC159_171012	Field_D	ES1725991	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.011	0.002	<0.001	1.99		
	13 Oct 2017	0445S_SW349_0.5_171013	Normal	ES1725991	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.010	0.001	<0.001	2.10		
	15 Nov 2021	0445_QC206_211115	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.51	0.89	1.11
	16 Nov 2021	0445_QC106_211115	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.00		
		0445_SW349_211115	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09		
	04 May 2022	0445_SW349_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.74		
	14 Oct 2022	0445_SW349_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.80		
	02 May 2023	0445_SW349_230502	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.71		
SW355	13 Oct 2017	0445S_SW355_0.5_171013	Normal	ES1725991	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.813		
	16 Nov 2021	0445_QC107_211117	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36		
	17 Nov 2021	0445_QC207_211117	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.52	0.31	0.41
		0445_SW355_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36		
	04 May 2022	0445_QC204_220504	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.37	0.27	0.32
		0445_SW355_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13		
	07 May 2022	0445_QC104_220504	Field_D	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.25		
	14 Oct 2022	0445_SW355_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.28		
	04 May 2023	0445_SW355_230504	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17		
SW370	23 Oct 2017	0445N_SW370_0.01_171023	Normal	ES1726698	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.003	<0.001	<0.001	0.550		
	17 Nov 2021	0445_SW370_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33		
	06 May 2022	0445_SW370_220506	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13		
	15 Oct 2022	0445_QC109_20221015	Field_D	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20		
		0445_QC209_221015	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.29	0.19	0.27
		0445_SW370_221015	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20		
	04 May 2023	0445_SW370_230504	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12		
SW374	23 Oct 2017	0445N_SW374_0.1_171023	Normal	ES1726698	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.525		
	17 Nov 2021	0445_SW374_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17		
	06 May 2022	0445_SW374_220506	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07		
	15 Oct 2022	0445_SW374_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12		
	05 May 2023	0445_SW374_230505	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
SW375	23 Oct 2017	0445N_QC128_171023	Field_D	ES1726698	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.465		
		0445N_QC228_171023	Interlab_D	569535	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.451		
		0445N_SW375_0.1_171023	Normal	ES1726698	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.440		
	01 Aug 2018	0445_QC105_180801	Field_D	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.139		
		0445_QC205_180801	Interlab_D	611290	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.145	0.076	0.107
		0445_SW375_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.144		
	17 Nov 2021	0445_SW375_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	06 May 2022	0445_SW375_220506	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08		
	12 Oct 2022	0445_SW375_221012	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08		
	05 May 2023	0445_SW375_230505	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07		

					Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
SW379	16 Nov 2021	0445_SW379_211116	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.07		
	14 Oct 2022	0445_SW379_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20		
SW380	10 Nov 2021	0445_SW380_211108	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.59		
	14 Oct 2022	0445_SW380_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20		
	06 May 2023	0445_SW380_230506	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11		
SW382	24 Oct 2017	0445E_QC131_171024	Field_D	ES1726816	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.164		
		0445E_SW382_0.1_171024	Normal	ES1726816	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.175		
	16 Nov 2021	0445_QC109_211116	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
		0445_QC209_211116	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.01
	17 Nov 2021	0445_SW382_211116	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	03 May 2022	0445_SW382_220503	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	13 Oct 2022	0445_SW382_221013	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	05 May 2023	0445_SW382_230505	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
SW387	25 Oct 2017	0445E_SW387_0.2_171025	Normal	ES1726955	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.222		
	16 Nov 2021	0445_SW387_211116	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
	03 May 2022	0445_QC101_220503	Field_D	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12		
		0445_QC201_220503	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.11	0.04	0.1
		0445_SW387_220503	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
	12 Oct 2022	0445_SW387_221012	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26		
	06 May 2023	0445_SW387_230506	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
SW388	25 Oct 2017	0445E_SW388_0.2_171025	Normal	ES1726955	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.416		
	16 Nov 2021	0445_SW388_211116	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.54		
	16 May 2022	0445S_SW388_220516	Normal	EM2209833	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.07		
	12 Oct 2022	0445_SW388_221210	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12		
SW390	13 Oct 2017	0445_SW390_0.5_171013	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0006		
	31 Jul 2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003		
	26 Nov 2018	0445_SW390_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0010		
	09 Nov 2021	0445_SW390_211109	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	05 May 2022	0445_SW390_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	11 Oct 2022	0445_SW390_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	04 May 2023	0445_SW390_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
SW393	16 Oct 2017	0445_SW393_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0029		
	01 Aug 2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003		
	26 Nov 2018	0445_SW393_0.2_181127	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0009		
	16 Nov 2021	0445_SW393_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	06 May 2022	0445_SW393_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	10 Nov 2022	0445_SW393_221110	Normal	EM2222367	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	04 May 2023	0445_SW393_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
SW395	09 Oct 2017	0445_QC153_171009	Field_D	ES1725705	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.251		
		0445_QC253_171010	Interlab_D	567888	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.274		
		0445_SW395_0.5_171010	Normal	ES1725705	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.286		
	03 Nov 2019	0445_SW395_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.157		
	16 Nov 2021	0445_SW395_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22		
	09 May 2022	0445_SW395_220509	Normal	EM2208629	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
	10 Nov 2022	0445_SW395_221110	Normal	EM2222367	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.43		
	06 May 2023	0445_SW395_230506	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06		
SW396	10 Oct 2017	0445_SW396_0.5_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	2.54		
	02 Aug 2018	0445_SW396_0.5_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	3.58		
	03 Nov 2019	0445_SW396_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	2.20		
	16 Nov 2021	0445_SW396_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.02		
	03 May 2022	0445_SW396_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.99		
	12 Oct 2022	0445_SW396_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.40		
	06 May 2023	0445_SW396_230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.27		
SW397	10 Oct 2017	0445_SW397_0.5_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	18.2		
		0445_SW397_1.0_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	17.7		
		0445_SW397_1.3_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.023	<0.001	<0.001	18.2		
	02 Aug 2018	0445_SW397_0.5_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.001	0.022	<0.001	<0.001	11.0		
	26 Nov 2018	0445_QC125_181126	Field_D	ES1835587	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.023	<0.001	<0.001	10.7		
		0445_QC225_181126	Interlab_D	630629	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	0.013	<0.001	<0.001	17	6.3	12
		0445_SW397_0.5_181126	Normal	ES1835587	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	12.7		
	03 Nov 2019	0445_QC135_191103	Field_D	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	0.021	<0.002	<0.002	13.9		
		0445_SW397_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	0.019	<0.002	<0.002	13.5		
	16 Nov 2021	0445_SW397_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.62		
	03 May 2022	0445_SW397_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.7		
	12 Oct 2022	0445_SW397_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.09		
	06 May 2023	0445_SW397_230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.25		

					Perfluorooctane Sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane Sulfonamide (EtFOSA)	N-Ethyl perfluorooctane Sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane Sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane Sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer Sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
SW398	12 Oct 2017	0445_SW398_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0009		
	01 Aug 2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003		
	26 Nov 2018	0445_SW398_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0004		
	16 Nov 2021	0445_SW398_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	03 May 2022	0445_SW398_220503	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Oct 2022	0445_SW398_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08		
	06 May 2023	0445_SW398_230506	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
SW400	10 Oct 2017	0445_SW400_0.3_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.27		
	02 Aug 2018	0445_QC106_180802	Field_D	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.337		
		0445_QC206_180802	Interlab_D	611294	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	0.005	<0.001	<0.005	<0.001	<0.001	0.494	0.162	0.362
		0445_SW400_0.2_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.391		
	03 Nov 2019	0445_SW400_0.2_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.326		
	16 Nov 2021	0445_SW400_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.25		
	03 May 2022	0445_SW400_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.75		
	12 Oct 2022	0445_SW400_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77		
	06 May 2023	0445_SW400_230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.40		
SW401	10 Oct 2017	0445_SW401_0.4_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.10		
	03 Nov 2019	0445_SW401_0.2_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.291		
	16 Nov 2021	0445_SW401_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.31		
	03 May 2022	0445_SW401_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.72		
	12 Oct 2022	0445_SW401_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36		
	06 May 2023	0445_SW401_230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.48		
SW403	12 Oct 2017	0445_SW403_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.336		
	12 Nov 2021	0445_SW403_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.84		
	05 May 2022	0445_SW403_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.84		
	15 Oct 2022	0445_SW403_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
	05 May 2023	0445_SW403_230505	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.27		
SW404	11 Oct 2017	0445_SW404_0.5_171011	Normal	ES1725716	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0012		
	01 Aug 2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003		
	26 Nov 2018	0445_SW404_0.52_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0025		
	12 Nov 2021	0445_SW404_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	17 Nov 2021	0445_SW404_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	05 May 2022	0445_SW404_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	15 Oct 2022	0445_SW404_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	04 May 2023	0445_SW404_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
SW405	12 Oct 2017	0445_SW405_0.2_171012	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.333		
	02 Aug 2018	0445_SW405_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.118		
	12 Nov 2021	0445_SW405_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.74		
	05 May 2022	0445_SW405_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13		
	15 Oct 2022	0445_SW405_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
	06 May 2023	0445_SW405_230506	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11		
SW409	14 Feb 2018	0445_SW409_0.0_180214	Normal	ES1805190	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.139		
	12 Nov 2021	0445_SW409_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	06 May 2022	0445_SW409_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
	15 Oct 2022	0445_SW409_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09		
	04 May 2023	0445_SW409_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
SW412	12 Oct 2017	0445_SW412_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.272		
	02 Aug 2018	0445_SW412_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0913		
	26 Nov 2018	0445_QC126_181126	Field_D	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0789		
		0445_SW412_0.2_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0766		
	12 Nov 2021	0445_SW412_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
	06 May 2022	0445_SW412_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11		
	15 Oct 2022	0445_SW412_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03		
	05 May 2023	0445_SW412_230505	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
SW416	11 Oct 2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003		
	01 Aug 2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003		
	26 Nov 2018	0445_SW416_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0005		
	12 Nov 2021	0445_SW416_211111	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	05 May 2022	0445_SW416_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Oct 2022	0445_SW416_221012	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	04 May 2023	0445_SW416_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
SW424	10 Oct 2017	0445_QC213	Interlab_D	567942	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	6.38		
	11 Oct 2017	0445_QC113	Field_D	ES1725716	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	5.82		
		0445_SW424_0.1_171011	Normal	ES1725716	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	5.05		
	13 Oct 2017	0445_SW424_0.1_171013	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.010	0.003	<0.001	1.68		
	15 Nov 2021	0445_QC208_211115	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.22	1.14	1.87
	16 Nov 2021	0445_SW424_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.36		
	07 May 2022	0445_SW424_220504	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.45		
	11 Oct 2022	0445_SW424_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.03		
	02 May 2023	0445_SW424_230502	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.46		

					Perfluorooctane Sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane Sulfonamide (EtFOSA)	N-Ethyl perfluorooctane Sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane Sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane Sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer Sulfonate (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003		0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
SW427	16 Oct 2017	0445_SW427_0.0_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	0.156		
	15 Nov 2021	0445_SW427_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.25		
	06 May 2022	0445_SW427_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03		
	11 Oct 2022	0445_SW427_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.56		
	04 May 2023	0445_SW427_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.54		
SW430	16 Oct 2017	0445_SW430_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0766		
	02 Aug 2018	0445_SW430_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0471		
	16 Nov 2021	0445_SW430_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16		
	06 May 2022	0445_SW430_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	11 Oct 2022	0445_SW430_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17		
	04 May 2023	0445_SW430_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19		
SW431	16 Oct 2017	0445_SW431_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0867		
	16 Nov 2021	0445_SW431_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
	06 May 2022	0445_SW431_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	11 Oct 2022	0445_SW431_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19		
	02 May 2023	0445_SW431_230502	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03		
SW432	16 Oct 2017	0445_SW432_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0936		
	16 Nov 2021	0445_SW432_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08		
	06 May 2022	0445_SW432_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	11 Oct 2022	0445_SW432_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09		
	04 May 2023	0445_SW432_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06		
SW434	09 Oct 2017	0445_SW434_0.5_171011	Normal	ES1725705	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0045		
	15 Nov 2021	0445_SW434_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07		
	06 May 2022	0445_SW434_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	11 Oct 2022	0445_SW434_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	02 May 2023	0445_SW434_230502	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03		
SW448	20 Oct 2017	0445S_SW448_0.1_171020	Normal	ES1726682	0.0056	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.012	0.005	<0.001	3.09		
	16 Nov 2021	0445_SW448_211115	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.85		
	14 Oct 2022	0445_SW448_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.46		
	03 May 2023	0445_QC104_230503	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.13		
		0445_QC204_230503	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.34	1.53	2.1
		0445_SW448_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.04		
SW462	23 Nov 2017	0445_SW462_0.1_171123	Normal	ES1729741	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.172		
	01 Aug 2018	0445_SW462_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0608		
	11 Nov 2021	0445_SW462_211111	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26		
	05 May 2022	0445_QC205_220505	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.04	0.06
		0445_SW462_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
	07 May 2022	0445_QC105_220505	Field_D	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03		
	11 Oct 2022	0445_SW462_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
	04 May 2023	0445_SW462_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
SW463	11 Dec 2017	0445_SW463_0.1_171211	Normal	ES1731468	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.50		
	16 Nov 2021	0445_SW463_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.35		
	04 May 2022	0445_SW463_220504	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.56		
	11 Oct 2022	0445_QC101_221011	Field_D	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.80		
		0445_QC201_221011	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.88	1.76	2.41
		0445_SW463_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.80		
	02 May 2023	0445_SW463_230502	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37		
SW470	02 Aug 2018	0445_SW470_0.5_180802	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.388		
	03 Nov 2019	0445_SW470_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.460		
	16 Nov 2021	0445_SW470_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	03 May 2022	0445_SW470_220503	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.48		
	04 May 2022	0445_QC203_220504	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.87	0.57	0.7
	07 May 2022	0445_QC103_220504	Field_D	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.73		
	12 Oct 2022	0445_SW470_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08		
	06 May 2023	0445_SW470_230506	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21		
SW471	02 Aug 2018	0445_SW471_0.2_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.92		
	03 Nov 2019	0445_SW471_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	3.97		
	16 Nov 2021	0445_SW471_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.60		
	03 May 2022	0445_SW471_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.28		
	12 Oct 2022	0445_SW471_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.89		
	06 May 2023	0445_SW471_230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.10		
SW487	02 Aug 2018	0445_SW487_0.01_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.022	<0.001	<0.001	12.0		
	16 Nov 2021	0445_SW487_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.84		
	03 May 2022	0445_SW487_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.0		
	12 Oct 2022	0445_SW487_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.54		
	06 May 2023	0445_SW487_230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.18		

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of lowest adopted screening criteria in latest monitoring round

					Perfluorocarbons																
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorononanesulfonic acid (PFNS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.0002	0.0002	0.0002	0.005	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.005	0.0002	0.0002	0.0002	0.0002
Location Code	Date	Field ID	Sample Type	Lab Report Number																	
SD323	17 Oct 2017	0445S_SD323_0.0_171017	Normal	ES1726190	0.0327	<0.0002	0.0342		<0.0002	<0.0002	0.0015	0.0003	0.0008	<0.001	<0.0002	0.0003		<0.0002	<0.0002	<0.0002	<0.0002
	04 May 2022	0445_QC209_220504	Interlab_D	886780	0.016	<0.005	0.016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		0445_SD323_220504	Normal	EM2208381	0.0167	<0.0002	0.0173		<0.0002	<0.0002	0.0006	<0.0002	0.0004	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	0.0003
	07 May 2022	0445_QC109_220504	Field_D	EM2208381	0.0152	<0.0002	0.0158		<0.0002	<0.0002	0.0006	<0.0002	0.0004	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	0.0002
	04 May 2023	0445_SD323_230504	Normal	EM2308015	0.0129	<0.0002	0.0137		<0.0002	<0.0002	0.0008	<0.0002	0.0003	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD346	12 Oct 2017	0445S_SD346_0.0_171013	Normal	ES1725991	0.0152	<0.0002	0.0161		<0.0002	<0.0002	0.0009	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	04 May 2022	0445_SD346_220504	Normal	EM2208381	0.0039	<0.0002	0.0041		<0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	05 May 2023	0445_SD346_230505	Normal	EM2308015	0.0109	<0.0002	0.0114		<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD355	13 Oct 2017	0445S_SD355_0.0_171012	Normal	ES1725991	0.0120	<0.0002	0.0128		<0.0002	<0.0002	0.0008	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	07 May 2022	0445_SD355_220504	Normal	EM2208381	0.0010	<0.0002	0.0010		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	04 May 2023	0445_SD355_230504	Normal	EM2308015	0.0011	<0.0002	0.0011		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD375	23 Oct 2017	0445N_SD375_0.0_171023	Normal	ES1726698	0.0114	<0.0002	0.0118		<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	06 May 2022	0445_SD375_220506	Normal	EM2208381	0.0042	<0.0002	0.0044		<0.0002	<0.0002	0.0002	<0.0002	0.0005	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	05 May 2023	0445_QC110_230505	Field_D	EM2308015	0.0021	<0.0002	0.0021		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
		0445_QC210_230505	Interlab_D	987797	<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		0445_SD375_230505	Normal	EM2308015	0.0032	<0.0002	0.0032		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD382	24 Oct 2017	0445N_SD382_0.0_171024	Normal	ES1726816	0.0011	<0.0002	0.0011		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	03 May 2022	0445_SD382_220503	Normal	EM2208381	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	05 May 2023	0445_QC108_230505	Field_D	EM2308015	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
		0445_QC208_230505	Interlab_D	987797	<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		0445_SD382_230505	Normal	EM2308015	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD395	09 Oct 2017	0445_QC152_171009	Field_D	ES1725705	0.0019	<0.0002	0.0022		<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
		0445_SD395_0.0_171010	Normal	ES1725705	0.0016	<0.0002	0.0016		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	10 Oct 2017	0445_QC252_171010	Interlab_D	567888	0.011	<0.001	0.0121		<0.001	<0.001	0.0011	<0.001	<0.001	<0.005	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001
	03 Nov 2019	0445_SD395_0.0_191103	Normal	ES1936497	0.0029	<0.0002	0.0033		<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	03 May 2022	0445_SD395_220503	Normal	EM2208382	0.0056	<0.0002	0.0059		<0.0002	<0.0002	0.0003	<0.0002	0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	06 May 2023	0445_SD395_230506	Normal	EM2308009	0.0020	<0.0002	0.0020		<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD396	10 Oct 2017	0445_SD396_0.0_171010	Normal	ES1725715	0.0116	<0.0002	0.0162		0.0005	0.0003	0.0046	<0.0002	<0.0002	<0.001	<0.0002	0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	03 Nov 2019	0445_SD396_0.0_191103	Normal	ES1936497	0.0421	0.0003	0.0545		0.0010	0.0007	0.0124	0.0011	<0.0002	<0.001	<0.0002	0.0006		<0.0002	<0.0002	<0.0002	<0.0002
	03 May 2022	0445_SD396_220503	Normal	EM2208382	0.0180	<0.0002	0.0373		0.0008	0.0014	0.0193	0.0009	<0.0002	<0.001	<0.0002	0.0009		<0.0002	<0.0002	<0.0002	<0.0002
	06 May 2023	0445_SD396_230506	Normal	EM2308004	0.0162	<0.0002	0.0223		0.0003	0.0004	0.0061	0.0004	<0.0002	<0.001	<0.0002	0.0003		<0.0002	<0.0002	<0.0002	<0.0002
SD397	10 Oct 2017	0445_SD397_0.0_171010	Normal	ES1725715	0.0263	0.0017	0.0527		0.0026	0.0028	0.0264	0.0024	<0.0002	<0.001	0.0006	0.0042		0.0008	<0.0002	<0.0002	<0.0002
		0445_SD397_0.4_171010	Normal	ES1725715	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
		0445_SD397_0.7_171010	Normal	ES1725715	0.0026	0.0003	0.0042		0.0004	0.0002	0.0016	<0.0002	<0.0002	<0.001	<0.0002	0.0008		<0.0002	<0.0002	<0.0002	<0.0002
	03 Nov 2019	0445_QC136_191103	Field_D	ES1936497	0.0324	0.0006	0.0387		0.0007	0.0007	0.0063	0.0009	<0.0002	<0.001	0.0002	0.0019		0.0002	<0.0002	<0.0002	<0.0002
		0445_SD397_0.0_191103	Normal	ES1936497	0.0280	0.0005	0.0336		0.0006	0.0006	0.0056	0.0008	<0.0002	<0.001	0.0002	0.0016		<0.0002	<0.0002	<0.0002	<0.0002
	03 May 2022	0445_SD397_220503	Normal	EM2208382	0.0196	0.0004	0.0442		0.0008	0.0021	0.0246	0.0016	<0.0002	<0.001	<0.0002	0.0008		0.0002	<0.0002	<0.0002	<0.0002
	06 May 2023	0445_SD397_230506	Normal	EM2308004	0.0666	0.0021	0.0861		0.0007	0.0016	0.0195	0.0041	<0.0002	<0.001	0.0003	0.0027		0.0007	<0.0002	<0.0002	<0.0002
SD400	10 Oct 2017	0445_SD400_0.0_171010	Normal	ES1725715	0.0016	<0.0002	0.0031		0.0002	<0.0002	0.0015	<0.0002	<0.0002	<0.001	<0.0002	0.0003		<0.0002	<0.0002	<0.0002	<0.0002
	03 Nov 2019	0445_SD400_0.0_191103	Normal	ES1936497	0.0078	<0.0002	0.0092		<0.0002	<0.0002	0.0014	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	03 May 2022	0445_SD400_220503	Normal	EM2208383	0.0117	<0.0002	0.0144		<0.0002	<0.0002	0.0027	0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	06 May 2023	0445_SD400_230506	Normal	EM2308004	0.0163	<0.0002	0.0193		<0.0002	<0.0002	0.0030	<0.0002	<0.0002	<0.001	<0.0002	0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD412	12 Oct 2017	0445_SD412_0.0_171012	Normal	ES1725997	0.0028	<0.0002	0.0038		<0.0002	<0.0002	0.0010	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	06 May 2022	0445_SD412_220506	Normal	EM2208383	0.0014	<0.0002	0.0014		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	05 May 2023	0445_SD412_230505	Normal	EM2308009	0.0020	<0.0002	0.0020		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD424	10 Oct 2017	0445_QC214	Interlab_D	567942	0.016	<0.005	0.016		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	<0.005
	11 Oct 2017	0445_QC114	Field_D	ES1725716	0.0012	<0.0002	0.0019		<0.0002	<0.0002	0.0007	<0.0002	<0.0002	<0.001	<0.0002	0.0005		<0.0002	<0.0002	<0.0002	<0.0002
		0445_SD424_0.0_171011	Normal	ES1725716	0.0011	<0.0002	0.0016		<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.001	<0.0002	0.0003		<0.0002	<0.0002	<0.0002	<0.0002
	13 Oct 2017	0445_SD424_0.0_171013	Normal	ES1725997	0.0062	0.0006	0.0069		<0.0002	<0.0002	0.0007	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	04 May 2022	0445_SD424_220504	Normal	EM2208383	0.0038	<0.0002	0.0041		<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	02 May 2023	0445_SD424_230502	Normal	EM2308009	0.0033	<0.0002	0.0035		<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
SD463	11 Dec 2017	0445_SD463_0.0_171211	Normal	ES1731468	0.0050	<0.0002	0.0056		<0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	04 May 2022	0445_QC110_220504	Field_D	EM2208383	0.0086	<0.0002	0.0091		<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
		0445_QC210_220504	Interlab_D	886780	0.013	<0.005	0.013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		0445_SD463_220504	Normal	EM2208383	0.0085	<0.0002	0.0088		<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002
	02 May 2023	0445_SD463_230502	Normal	EM2308009	0.0048	<0.0002	0.0051		<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002

					Perfluorocarbons																	
					Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.005	0.005	
Location Code	Date	Field ID	Sample Type	Lab Report Number																		
SD323	17 Oct 2017	0445S_SD323_0.0_171017	Normal	ES1726190	<0.0002	<0.0002	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0363		
	04 May 2022	0445_QC209_220504	Interlab_D	886780	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.05	0.016	0.016
		0445_SD323_220504	Normal	EM2208381	<0.0002	0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0184		
	07 May 2022	0445_QC109_220504	Field_D	EM2208381	<0.0002	0.0005	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0171		
	04 May 2023	0445_SD323_230504	Normal	EM2308015	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0140		
SD346	12 Oct 2017	0445S_SD346_0.0_171013	Normal	ES1725991	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0161		
	04 May 2022	0445_SD346_220504	Normal	EM2208381	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0043		
	05 May 2023	0445_SD346_230505	Normal	EM2308015	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0114		
SD355	13 Oct 2017	0445S_SD355_0.0_171012	Normal	ES1725991	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0128		
	07 May 2022	0445_SD355_220504	Normal	EM2208381	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0010		
	04 May 2023	0445_SD355_230504	Normal	EM2308015	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0011		
SD375	23 Oct 2017	0445N_SD375_0.0_171023	Normal	ES1726698	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0118		
	06 May 2022	0445_SD375_220506	Normal	EM2208381	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0049		
	05 May 2023	0445_QC110_230505	Field_D	EM2308015	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0021		
		0445_QC210_230505	Interlab_D	987797	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.05	<0.005	<0.005
		0445_SD375_230505	Normal	EM2308015	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0032		
SD382	24 Oct 2017	0445N_SD382_0.0_171024	Normal	ES1726816	0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0013		
	03 May 2022	0445_SD382_220503	Normal	EM2208381	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002		
	05 May 2023	0445_QC108_230505	Field_D	EM2308015	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002		
		0445_QC208_230505	Interlab_D	987797	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.05	<0.005	<0.005
		0445_SD382_230505	Normal	EM2308015	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002		
SD395	09 Oct 2017	0445_QC152_171009	Field_D	ES1725705	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0022		
		0445_SD395_0.0_171010	Normal	ES1725705	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0016		
	10 Oct 2017	0445_QC252_171010	Interlab_D	567888	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	<0.05			
	03 Nov 2019	0445_SD395_0.0_191103	Normal	ES1936497	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0033		
	03 May 2022	0445_SD395_220503	Normal	EM2208382	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0061		
	06 May 2023	0445_SD395_230506	Normal	EM2308009	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0022		
SD396	10 Oct 2017	0445_SD396_0.0_171010	Normal	ES1725715	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0172		
	03 Nov 2019	0445_SD396_0.0_191103	Normal	ES1936497	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0582		
	03 May 2022	0445_SD396_220503	Normal	EM2208382	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0413		
	06 May 2023	0445_SD396_230506	Normal	EM2308004	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0237		
SD397	10 Oct 2017	0445_SD397_0.0_171010	Normal	ES1725715	<0.0002	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0678		
		0445_SD397_0.4_171010	Normal	ES1725715	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002		
		0445_SD397_0.7_171010	Normal	ES1725715	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0059		
	03 Nov 2019	0445_QC136_191103	Field_D	ES1936497	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0439		
		0445_SD397_0.0_191103	Normal	ES1936497	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0379		
	03 May 2022	0445_SD397_220503	Normal	EM2208382	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0501		
	06 May 2023	0445_SD397_230506	Normal	EM2308004	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0983		
SD400	10 Oct 2017	0445_SD400_0.0_171010	Normal	ES1725715	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0036		
	03 Nov 2019	0445_SD400_0.0_191103	Normal	ES1936497	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0092		
	03 May 2022	0445_SD400_220503	Normal	EM2208383	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0146		
	06 May 2023	0445_SD400_230506	Normal	EM2308004	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0205		
SD412	12 Oct 2017	0445_SD412_0.0_171012	Normal	ES1725997	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0038		
	06 May 2022	0445_SD412_220506	Normal	EM2208383	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0014		
	05 May 2023	0445_SD412_230505	Normal	EM2308009	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0020		
SD424	10 Oct 2017	0445_QC214	Interlab_D	567942	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.05		
	11 Oct 2017	0445_QC114	Field_D	ES1725716	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0024		
		0445_SD424_0.0_171011	Normal	ES1725716	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0019		
	13 Oct 2017	0445_SD424_0.0_171013	Normal	ES1725997	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0075		
	04 May 2022	0445_SD424_220504	Normal	EM2208383	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0041		
	02 May 2023	0445_SD424_230502	Normal	EM2308009	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0035		
SD463	11 Dec 2017	0445_SD463_0.0_171211	Normal	ES1731468	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0056		
	04 May 2022	0445_QC110_220504	Field_D	EM2208383	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0091		
		0445_QC210_220504	Interlab_D	886780	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.05	0.013	0.013
		0445_SD463_220504	Normal	EM2208383	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0088		
	02 May 2023	0445_SD463_230502	Normal	EM2308009	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0051		

		Field ID	0445_SW321_230501	0445_QC100_230501		0445_SW321_230501	0445_QC200_230501		0445_SW324_230501	0445_QC101_230501		0445_SW324_230501	0445_QC201_230501	
		Matrix Type	Water	Water		Water	Water		Water	Water		Water	Water	
		Date	01 May 2023	01 May 2023		01 May 2023	01 May 2023		01 May 2023	01 May 2023		01 May 2023	01 May 2023	
		Lab Report Number	EM2308015	EM2308015	RPD	EM2308015	987797	RPD	EM2308015	EM2308015	RPD	EM2308015	987797	RPD
	Unit	LOR												
NA														
Perfluorononane sulfonate (PFNS)	µg/L	0.01					<0.01						<0.01	
Sum of WA DWER PFAS (n=10)*	UG/L	0.01	4.82	5.12	6	4.82	5.46	12	2.98	2.95	1	2.98	3.32	11
Perfluorocarbons														
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	3.97	4.28	8	3.97	4.7	17	1.80	1.80	0	1.80	2.1	15
Perfluorooctanoate (PFOA)	µg/L	0.01	0.03	0.03	0	0.03	0.03	0	0.09	0.09	0	0.09	0.08	12
Sum of PFHxS and PFOS	µg/L	0.01	4.67	4.97	6	4.67	5.32	13	2.46	2.44	1	2.46	2.81	13
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	0.04	0.04	0	0.04	0.04	0	0.07	0.07	0	0.07	0.05	33
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	0.05	0.05	0	0.05	0.04	22	0.06	0.05	18	0.06	0.05	18
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.70	0.69	1	0.70	0.62	12	0.66	0.64	3	0.66	0.71	7
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	0.05	0.05	0	0.05	0.07	33	0.03	0.02	40	0.03	0.03	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0	<0.1	0.06	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0	0.12	0.12	0	0.12	0.11	9
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	0.08	0.08	0	0.08	0.07	13	0.18	0.18	0	0.18	0.16	12
Perfluoropropanesulfonic acid (PFPrS)	UG/L						0.01						0.02	
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0	0.06	0.05	18	0.06	0.05	18
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	0.02	0	<0.02	0.02	0
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/L	0.00005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.01	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Sum of PFAS	µg/L	0.01	4.92	5.22	6	4.92	5.58	13	3.07	3.04	1	3.07	3.44	11

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 30 (1 - 10 x EQL); 30 (10 - 30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		0445_SW338_230502	0445_QC102_230502		0445_SW338_230502	0445_QC202_230502		0445_SW448_230503	0445_QC104_230503		0445_SW448_230503	0445_QC204_230503		0445_SW316_230503
		Water	Water		Water	Water		Water	Water		Water	Water		Water
		02 May 2023	02 May 2023		02 May 2023	02 May 2023		03 May 2023	03 May 2023		03 May 2023	03 May 2023		03 May 2023
		EM2308015	EM2308015	RPD	EM2308015	987797	RPD	EM2308015	EM2308015	RPD	EM2308015	987797	RPD	EM2308015
	Unit													
NA														
Perfluorononane sulfonate (PFNS)	µg/L					<0.01						<0.01		
Sum of WA DWER PFAS (n=10)*	UG/L	0.90	0.95	5	0.90	1.13	23	2.01	2.08	3	2.01	2.27	12	0.18
Perfluorocarbons														
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.53	0.55	4	0.53	0.72	30	1.23	1.28	4	1.23	1.5	20	0.11
Perfluorooctanoate (PFOA)	µg/L	0.03	0.03	0	0.03	0.04	29	0.03	0.03	0	0.03	0.03	0	<0.01
Sum of PFHxS and PFOS	µg/L	0.71	0.75	5	0.71	0.91	25	1.81	1.88	4	1.81	2.07	13	0.18
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.03	0.03	0	0.03	0.03	0	0.04	0.04	0	0.04	0.03	29	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	0.03	40	0.02	0.03	40	0.03	0.03	0	0.03	0.03	0	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.18	0.20	11	0.18	0.19	5	0.58	0.60	3	0.58	0.57	2	0.07
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	<0.02	0	<0.02	0.01	0	<0.02	0.02	0	<0.02	0.02	0	<0.02
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0	<0.1	<0.05	0	<0.1
Perfluoropentanoic acid (PFPeA)	µg/L	0.03	0.03	0	0.03	0.03	0	0.04	0.04	0	0.04	0.04	0	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.10	0.11	10	0.10	0.10	0	0.09	0.09	0	0.09	0.08	12	<0.02
Perfluoropropanesulfonic acid (PFPrS)	UG/L					<0.01						0.02		
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	<0.02	0	<0.02	0.02	0	<0.02	<0.02	0	<0.02	0.02	0	<0.02
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/L	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05
Sum of PFAS	µg/L	0.92	0.98	6	0.92	1.17	24	2.04	2.13	4	2.04	2.34	14	0.18

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is gre
**Elevated RPDs are highlighted as per QAQC Profile settings (
***Interlab Duplicates are matched on a per compound basis a

		0445_QC103_230503		0445_SW316_230503	0445_QC203_230503		0445_MW304_230504	0445_QC105_230504		0445_MW304_230504	0445_QC205_230504		0445_MW351_230505	0445_QC107_230505	
		Water		Water	Water		Water	Water		Water	Water		Water	Water	
		03 May 2023		03 May 2023	03 May 2023		04 May 2023	04 May 2023		04 May 2023	04 May 2023		05 May 2023	05 May 2023	
		EM2308015	RPD	EM2308015	987797	RPD	EM2308015	EM2308015	RPD	EM2308015	987797	RPD	EM2308015	EM2308015	RPD
	Unit														
NA															
Perfluorononane sulfonate (PFNS)	µg/L				<0.01						<0.01				
Sum of WA DWER PFAS (n=10)*	UG/L	0.21	15	0.18	0.23	24	0.46	0.28	49	0.46	0.4	14	0.05	0.04	22
Perfluorocarbons															
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.11	0	0.11	0.14	24	0.14	0.10	33	0.14	0.15	7	0.03	0.02	40
Perfluorooctanoate (PFOA)	µg/L	<0.01	0	<0.01	<0.01	0	<0.02	<0.02	0	<0.02	0.02	0	<0.01	<0.01	0
Sum of PFHxS and PFOS	µg/L	0.19	5	0.18	0.21	15	0.34	0.24	34	0.34	0.32	6	0.05	0.04	22
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	0	<0.02	0.02	0	0.03	0.02	40	0.03	0.02	40	<0.02	<0.02	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	0.02	0	<0.02	<0.02	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.08	13	0.07	0.07	0	0.20	0.14	35	0.20	0.17	16	0.02	0.02	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	0.02	0	<0.02	<0.02	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0
Perfluoropentanoic acid (PFPeA)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	0.01	0	<0.02	<0.02	0
Perfluorohexanoic acid (PFHxA)	µg/L	<0.02	0	<0.02	<0.01	0	0.04	0.02	67	0.04	0.03	29	<0.02	<0.02	0
Perfluoropropanesulfonic acid (PFPrS)	UG/L				<0.01						<0.01				
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorononanoic acid (PFNA)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/L	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	0	<0.05	<0.05	0	0.05	<0.05	0	0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Sum of PFAS	µg/L	0.21	15	0.18	0.23	24	0.46	0.28	49	0.46	0.44	4	0.05	0.04	22

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is gre
**Elevated RPDs are highlighted as per QAQC Profile settings (
***Interlab Duplicates are matched on a per compound basis a

		0445_MW351_230505	0445_QC207_230505		0445_MW034_230505	0445_QC109_230505		0445_MW034_230505	0445_QC209_230505		0445_MW035_230505	0445_QC106_230505		0445_MW035_230505	0445_QC206_230505	
		Water	Water		Water	Water		Water	Water		Water	Water		Water	Water	
		05 May 2023	05 May 2023		05 May 2023	05 May 2023		05 May 2023	05 May 2023		05 May 2023	05 May 2023		05 May 2023	05 May 2023	
		EM2308015	987797	RPD	EM2308015	EM2308015	RPD	EM2308015	987797	RPD	EM2308015	EM2308015	RPD	EM2308015	987797	RPD
	Unit															
NA																
Perfluorononane sulfonate (PFNS)	µg/L		<0.01						<0.01						<0.01	
Sum of WA DWER PFAS (n=10)*	UG/L	0.05	<0.05	0	1.66	1.61	3	1.66	1.77	6	19.3	19.6	2	19.3	20.42	6
Perfluorocarbons																
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.03	0.02	40	1.02	0.97	5	1.02	1.1	8	7.66	7.41	3	7.66	8.3	8
Perfluorooctanoate (PFOA)	µg/L	<0.01	<0.01	0	0.03	0.03	0	0.03	0.03	0	0.50	0.56	11	0.50	0.65	26
Sum of PFHxS and PFOS	µg/L	0.05	0.04	22	1.50	1.45	3	1.50	1.59	6	14.7	14.8	1	14.7	15.9	8
Perfluorobutane sulfonic acid (PFBS)	µg/L	<0.02	<0.01	0	0.05	0.05	0	0.05	0.05	0	1.07	1.21	12	1.07	1.1	3
Perfluoropentane sulfonic acid (PFPeS)	µg/L	<0.02	<0.01	0	0.06	0.06	0	0.06	0.05	18	1.27	1.06	18	1.27	1.1	14
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.02	0.02	0	0.48	0.48	0	0.48	0.49	2	7.02	7.35	5	7.02	7.6	8
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	<0.01	0	0.04	0.03	29	0.04	0.04	0	0.56	0.54	4	0.56	0.78	33
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	<0.05	0	<0.1	<0.1	0	<0.1	<0.05	0	0.2	0.3	40	0.2	0.27	30
Perfluoropentanoic acid (PFPeA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	0.02	0	0.44	0.47	7	0.44	0.39	12
Perfluorohexanoic acid (PFHxA)	µg/L	<0.02	<0.01	0	0.08	0.08	0	0.08	0.07	13	1.88	1.68	11	1.88	1.6	16
Perfluoropropanesulfonic acid (PFPrS)	UG/L		<0.01						0.01						0.45	
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	0.01	0	0.30	0.34	13	0.30	0.30	0
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/L	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	0.21	0.25	17	0.21	0.21	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Sum of PFAS	µg/L	0.05	<0.1	0	1.76	1.70	3	1.76	1.87	6	21.1	21.2	0	21.1	22.75	8

Groundwater Samples
Surface Water Samples

*RPDs have only been considered where a concentration is gre
**Elevated RPDs are highlighted as per QAQC Profile settings (
***Interlab Duplicates are matched on a per compound basis a

			Field ID	0445_SD375_230505	0445_QC110_230505		0445_SD375_230505	0445_QC210_230505		0445_SD382_230505	0445_QC108_230505		0445_SD382_230505	0445_QC208_230505	
			Matrix Type	Sediment	Sediment		Sediment	Sediment		Sediment	Sediment		Sediment	Sediment	
			Date	05 May 2023	05 May 2023		05 May 2023	05 May 2023		05 May 2023	05 May 2023		05 May 2023	05 May 2023	
			Lab Report Number	EM2308015	EM2308015	RPD	EM2308015	987797	RPD	EM2308015	EM2308015	RPD	EM2308015	987797	RPD
	Unit	LOR													
NA															
Sum of WA DWER PFAS (n=10)*	mg/kg		0.0032	0.0021	42	0.0032			<0.0002	<0.0002	0	<0.0002			
Perfluorocarbons															
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002	0.0032	0.0021	42	0.0032	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorooctanoate (PFOA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Sum of PFHxS and PFOS	mg/kg	0.0002	0.0032	0.0021	42	0.0032	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorobutanoic acid (PFBA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.005	0	<0.001	<0.001	0	<0.001	<0.005	0	
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluoropropanesulfonic acid (PFPrS)	mg/kg	0.005					<0.005						<0.005		
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorononanoic acid (PFNA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.01	0	<0.0002	<0.0002	0	<0.0002	<0.01	0	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.01	0	<0.0002	<0.0002	0	<0.0002	<0.01	0	
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.01	0	<0.0005	<0.0005	0	<0.0005	<0.01	0	
8:2 Fluorotelomer sulfonate (8:2 FtS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.005	0	<0.0005	<0.0005	0	<0.0005	<0.005	0	
Sum of PFAS	mg/kg	0.0002	0.0032	0.0021	42	0.0032	<0.05	0	<0.0002	<0.0002	0	<0.0002	<0.05	0	

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 30 (1 - 10 x EQL); 30 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		Lab Report Number	EM2308015	EM2308015	EM2308015	EM2308015	EM2308015	EM2308015	EM2308015	EM2308015	EM2308015	EM2308015	EM2308015
		Field ID	0445_QC300_230501	0445_QC301_230502	0445_QC303_230503	0445_QC305_230504	0445_QC307_230505	0445_QC308_230506	0445_QC500_230506	0445_QC501_230506	0445_QC502_230506	0445_QC503_230506	0445_QC504_230506
		Date	01 May 2023	04 May 2023	03 May 2023	04 May 2023	05 May 2023	06 May 2023	06 May 2023	06 May 2023	06 May 2023	06 May 2023	06 May 2023
		Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B
	Unit	LOR											
NA													
Sum of WA DWER PFAS (n=10)*	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorocarbons													
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

APPENDIX

C

LABORATORY CERTIFICATES

CERTIFICATE OF ANALYSIS

Work Order	: **EM2308003**	Page	: 1 of 5
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: LEVEL 21 28 FRESHWATER PLACE SOUTHBANK VIC, AUSTRALIA 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9609
Project	: VIC_0445_PFASOMP	Date Samples Received	: 08-May-2023 13:45
Order number	: -	Date Analysis Commenced	: 09-May-2023
C-O-C number	: 51620	Issue Date	: 12-May-2023 18:36
Sampler	: [redacted]		
Site	: VIC_0445_PFASOMP_PO2		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_OTH019_230502	----	----	----	----
			Sampling date / time	02-May-2023 12:16	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2308003-001	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.11**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.05**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_OTH019_230502	----	----	----	----
				Sampling date / time	02-May-2023 12:16	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2308003-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.16**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.16**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.16**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.2**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.5**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EM2308003**	Page	: 1 of 4
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: LEVEL 21 28 FRESHWATER PLACE SOUTHBANK VIC, AUSTRALIA 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9609
Project	: VIC_0445_PFASOMP	Date Samples Received	: 08-May-2023
Order number	: -	Date Analysis Commenced	: 09-May-2023
C-O-C number	: 51620	Issue Date	: 12-May-2023
Sampler	: [redacted]		
Site	: VIC_0445_PFASOMP_PO2		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5040519)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	96.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	107	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.2	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	111	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	99.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	82.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5040519)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	99.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	93.7	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	89.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	92.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	94.3	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	92.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	85.7	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	103	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5040519)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	96.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	100	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.3	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	105	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	87.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5040519)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5040519) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	96.5	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	105	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	98.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	92.1	70.0	130
EP231P: PFAS Sums (QCLot: 5040519)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2308003**	Page	: 1 of 4
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: +6138549 9609
Project	: VIC_0445_PFASOMP	Date Samples Received	: 08-May-2023
Site	: VIC_0445_PFASOMP_PO2	Issue Date	: 12-May-2023
Sampler	: [redacted]	No. of samples received	: 1
Order number	: -	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
	0				
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_OTH019_230502	**02-May-2023**	**10-May-2023**	29-Oct-2023	✓	**12-May-2023**	29-Oct-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0445_OTH019_230502	**02-May-2023**	**10-May-2023**	29-Oct-2023	✓	**12-May-2023**	29-Oct-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0445_OTH019_230502	**02-May-2023**	**10-May-2023**	29-Oct-2023	✓	**12-May-2023**	29-Oct-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_OTH019_230502	**02-May-2023**	**10-May-2023**	29-Oct-2023	✓	**12-May-2023**	29-Oct-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_OTH019_230502	**02-May-2023**	**10-May-2023**	29-Oct-2023	✓	**12-May-2023**	29-Oct-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2308003**

Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: LEVEL 21 28 FRESHWATER PLACE SOUTHBANK VIC, AUSTRALIA 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +6138549 9609
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: VIC_0445_PFASOMP	Page	: 1 of 2
Order number	: -	Quote number	: EM2022MWHAUS0003 (SY/139/19_Bandiana)
C-O-C number	: 51620	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: VIC_0445_PFASOMP_PO2		
Sampler	: [redacted]		

Dates

Date Samples Received	: 08-May-2023 13:45	Issue Date	: 11-May-2023
Client Requested Due Date	: 15-May-2023	Scheduled Reporting Date	: **15-May-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 8.2°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EM2308003-001	02-May-2023 12:16	0445_OTH019_230502	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS ADDRESS

- A4 - AU Tax Invoice (INV) — Email — sapinvoices@stantec.com

[redacted]

DERP LABREPORTS

- EDI Format - ESDAT (ESDAT) — Email — derp.labreports@esdat.com.au

[redacted]

CHAIN OF CUSTODY

(ALS) *COC#:* **51620** *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY: [redacted]
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 08/05/23 – 13:45

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_PO2

ORDER NO:

PROJECT MANAGER: [redacted] CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

PRIMARY SAMPLER: [redacted] QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_OTH019_230502		02/05/2023 12:16 PM	WATER	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Melbourne
Work Order Reference
EM2308003

Telephone : +61-3-8549 9600

CERTIFICATE OF ANALYSIS

Work Order	: **EM2308004**	Page	: 1 of 5
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: LEVEL 21 28 FRESHWATER PLACE SOUTHBANK VIC, AUSTRALIA 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138945 5605
Project	: VIC_0449_PFASOMP	Date Samples Received	: 08-May-2023 13:49
Order number	: -	Date Analysis Commenced	: 05-May-2023
C-O-C number	: 91615	Issue Date	: 19-May-2023 17:17
Sampler	: [redacted]		
Site	: VIC_0449_PFASOMP_PO1		
Quote number	: SY/135/15_Bandiana		
No. of samples received	: 5		
No. of samples analysed	: 5		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
[redacted]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 129ml bottles have been tested in accordance with the QSM9.3 compliant, NATA accredited method. 60mL or 290mL bottles have been tested to the legacy QSM 9.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2308004-011 due to sample matrix interference. Confirmed by re-analysis.
- EP231X: Poor matrix spike recovery for sample EM2308134-003 due to sample matrix interference.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 90-190% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 9.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0445_SD396_ 230506	0445_SD397_230506	0445_SD400_230506	----	----
			Sampling date / time	06-May-2023 13:39	06-May-2023 13:30	06-May-2023 13:25	----	----
Compound	CAS Number	LOR	Unit	EM2308004-001	EM2308004-010	EM2308004-011	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**5.8**	**43.8**	**5.3**	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	379-73-9	0.0002	mg/kg	**0.0003**	**0.0007**	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-51-4	0.0002	mg/kg	**0.0004**	**0.0016**	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	399-46-4	0.0002	mg/kg	**0.0061**	**0.0195**	**0.0030**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	379-52-8	0.0002	mg/kg	**0.0004**	**0.0041**	<0.0002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0162**	**0.0666**	**0.0163**	----	----
Perfluorodecane sulfonic acid (PFDS)	339-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	379-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-50-3	0.0002	mg/kg	<0.0002	**0.0003**	<0.0002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0003**	**0.0027**	**0.0002**	----	----
Perfluoroheptanoic acid (PFHpA)	379-89-5	0.0002	mg/kg	<0.0002	**0.0007**	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	339-67-1	0.0002	mg/kg	<0.0002	**0.0021**	<0.0002	----	----
Perfluorononanoic acid (PFNA)	379-59-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluorodecanoic acid (PFDA)	339-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2098-54-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-99-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72625-54-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0009	mg/kg	<0.0009	<0.0009	<0.0009	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	794-51-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31906-32-8	0.0009	mg/kg	<0.0009	<0.0009	<0.0009	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0445_SD396_ 230506	0445_SD397_230506	0445_SD400_230506	----	----
				Sampling date / time	06-May-2023 13:39	06-May-2023 13:30	06-May-2023 13:25	----	----
Compound	CAS Number	LOR	Unit		EM2308004-001	EM2308004-010	EM2308004-011	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4191-90-2	0.0009	mg/kg		<0.0009	<0.0009	<0.0009	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-05-7	0.0009	mg/kg		<0.0009	<0.0009	<0.0009	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1651-55-2	0.0009	mg/kg		<0.0009	<0.0009	<0.0009	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2399-31-5	0.0002	mg/kg		<0.0002	<0.0002	**0.0004**	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2551-90-6	0.0002	mg/kg		<0.0002	<0.0002	**0.0006**	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	797124-72-4	0.0009	mg/kg		<0.0009	<0.0009	<0.0009	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27615-57-2	0.0009	mg/kg		<0.0009	<0.0009	<0.0009	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	35108-34-4	0.0009	mg/kg		<0.0009	<0.0009	<0.0009	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0009	mg/kg		<0.0009	<0.0009	<0.0009	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0237**	**0.0983**	**0.0205**	----	----
Sum of PFHxS and PFOS	399-46-4/1763-23-1	0.0002	mg/kg		**0.0223**	**0.0861**	**0.0193**	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0229**	**0.0926**	**0.0195**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**95.2**	**70.0**	**128**	----	----
13C8-PFOA	----	0.0002	%		**77.8**	**71.5**	**88.2**	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW396_ 230506	0445_SW397_ 230506	0445_SW400_ 230506	0445_SW401_ 230506	0445_SW471_ 230506
			Sampling date / time	06-May-2023 13:32	06-May-2023 13:33	06-May-2023 13:32	06-May-2023 13:34	06-May-2023 13:31
Compound	CAS Number	LOR	Unit	EM2308004-004	EM2308004-005	EM2308004-006	EM2308004-007	EM2308004-008
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	379-73-9	0.02	µg/L	**0.14**	**0.58**	**0.02**	**0.05**	**0.08**
Perfluoropentane sulfonic acid (PFPeS)	2706-51-4	0.02	µg/L	**0.18**	**0.62**	**0.03**	**0.05**	**0.09**
Perfluorohexane sulfonic acid (PFHxS)	399-46-4	0.01	µg/L	**1.14**	**3.41**	**0.18**	**0.22**	**0.48**
Perfluoroheptane sulfonic acid (PFHpS)	379-52-8	0.02	µg/L	**0.05**	**0.24**	<0.02	<0.02	**0.02**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.49**	**2.79**	**0.14**	**0.11**	**0.32**
Perfluorodecane sulfonic acid (PFDS)	339-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	379-22-4	0.1	µg/L	<0.1	**0.1**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-50-3	0.02	µg/L	**0.04**	**0.20**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.17**	**0.87**	**0.02**	**0.04**	**0.08**
Perfluoroheptanoic acid (PFHpA)	379-89-5	0.02	µg/L	**0.02**	**0.16**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	339-67-1	0.01	µg/L	**0.04**	**0.28**	**0.01**	**0.01**	**0.03**
Perfluorononanoic acid (PFNA)	379-59-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	339-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2098-54-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-99-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72625-54-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.09	µg/L	<0.09	<0.09	<0.09	<0.09	<0.09
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	794-51-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31906-32-8	0.09	µg/L	<0.09	<0.09	<0.09	<0.09	<0.09
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4191-90-2	0.09	µg/L	<0.09	<0.09	<0.09	<0.09	<0.09

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW396_ 230506	0445_SW397_ 230506	0445_SW400_ 230506	0445_SW401_ 230506	0445_SW471_ 230506
				Sampling date / time	06-May-2023 13:32	06-May-2023 13:33	06-May-2023 13:32	06-May-2023 13:34	06-May-2023 13:31
Compound	CAS Number	LOR	Unit		EM2308004-004	EM2308004-005	EM2308004-006	EM2308004-007	EM2308004-008
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-05-7	0.09	µg/L		<0.09	<0.09	<0.09	<0.09	<0.09
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1651-55-2	0.09	µg/L		<0.09	<0.09	<0.09	<0.09	<0.09
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2399-31-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2551-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	797124-72-4	0.09	µg/L		<0.09	<0.09	<0.09	<0.09	<0.09
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27615-57-2	0.09	µg/L		<0.09	<0.09	<0.09	<0.09	<0.09
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	35108-34-4	0.09	µg/L		<0.09	<0.09	<0.09	<0.09	<0.09
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.09	µg/L		<0.09	<0.09	<0.09	<0.09	<0.09
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.27**	**9.25**	**0.40**	**0.48**	**1.10**
Sum of PFHxS and PFOS	399-46-4/1763-23-1	0.01	µg/L		**1.63**	**6.20**	**0.32**	**0.33**	**0.80**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.04**	**8.39**	**0.37**	**0.43**	**0.99**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**88.8**	**83.5**	**80.6**	**86.9**	**92.1**
13C8-PFOA	----	0.02	%		**96.2**	**98.5**	**96.2**	**92.6**	**95.5**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW487_ 230506	----	----	----	----
			Sampling date / time	06-May-2023 13:39	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2308004-009	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	379-73-9	0.02	µg/L	**0.57**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-51-4	0.02	µg/L	**0.61**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	399-46-4	0.01	µg/L	**3.32**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	379-52-8	0.02	µg/L	**0.25**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**2.84**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	339-77-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	379-22-4	0.1	µg/L	**0.1**	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-50-3	0.02	µg/L	**0.20**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.85**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	379-89-5	0.02	µg/L	**0.16**	----	----	----	----
Perfluorooctanoic acid (PFOA)	339-67-1	0.01	µg/L	**0.28**	----	----	----	----
Perfluorononanoic acid (PFNA)	379-59-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	339-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2098-54-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-99-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72625-54-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.09	µg/L	<0.09	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	794-51-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31906-32-8	0.09	µg/L	<0.09	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4191-90-2	0.09	µg/L	<0.09	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW487_ 230506	----	----	----	----
				Sampling date / time	06-May-2023 13:39	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2308004-009	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-05-7	0.09	µg/L		<0.09	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1651-55-2	0.09	µg/L		<0.09	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2399-31-5	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2551-90-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	797124-72-4	0.09	µg/L		<0.09	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27615-57-2	0.09	µg/L		<0.09	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	35108-34-4	0.09	µg/L		<0.09	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.09	µg/L		<0.09	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**9.18**	----	----	----	----
Sum of PFHxS and PFOS	399-46-4/1763-23-1	0.01	µg/L		**6.16**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**8.32**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**86.0**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.1**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	65	133

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	69	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EM2308004**	gu: a	o1 f 41T
I éany	o**STANTEC AUSTRALIA PTY LTD**	Lubf tuyf tC	oEnvitf nmanyueDiviPtf n s aebf Mtna
I f nyucy	o[redacted]	I f nyucy	o[redacted]
AddtaPP	oLEVEL . 1 . 2 r 8 EFRS AHE8 gLAI E FWOHRBAUN VK I AOF H8 ALKA , TT3	AddtaPP	o6 S aPyuee8 d Fptin: vuea VK AMPytuéu , 171
Haeaphf na	o----	Haeaphf na	o+31, 2569 93T9
gtf jacy	oVK _T665_gr AFWs g	Duya FumpeaP 8 acaivad	oT2-s uC-. T. ,
Wtdat nMmbat	o-	Duya AnueCPtPI f mmancad	oT9-s uC-. T. ,
I -W-I nMmbat	o51319	KPPMa Duya	o15-s uC-. T. ,
Fumpeat	o[redacted]		
Fiya	oVK _T665_gr AFWs g_gW1		
QMf ya nMmbat	oFY/1, 9/19_Bundiunu		
Uf 0f 4PumpeaPtacaivad	o9		
Uf 0f 4PumpeaPunueCPad	o9		

HhiP tapf ty PMpatPadaP unC ptavif MP tapf ty(P) wiyh yhiP ta4atanca0 8 aPMyP uppeC yf yha Pumpea(P) uP PMbmiyyadI MneaPP yha Pumpein: wuP cf ndMcyad bC ALF0 HhiP df cMmany Phue nf yba taptf dMcadI axcapyin 4Mé0

HhiP QMueyCI f nytf e8 apf ty cf nyuinP yha 4f ef win: in4f tmuyf no

- Lubf tuyf tCDMpéicuya (DOg) 8 apf ty; 8 aeuyiva gatcanyu: a Di4atanca (8 gD) und Accapyunca LimiyP
- s ayhf d Beunk (s B) und Lubf tuyf tCI f nytf eFpika (LI F) 8 apf ty; 8 acf vatCund Accapyunca LimiyP
- s uytix Fpika (s F) 8 apf ty; 8 acf vatCund Accapyunca LimiyP

Signatories

HhiP df cMmanyhuP baan aeacytf nicueCPi: nad bCyha uMyhf tizad Pi: nuyf tiaP baef w0Eeacytf nic Pi: nin: iPcuttiad f Myin cf mpéunca wiyh ptf cadMtaPPpaci4ad in . 1 I r 8 guty110

Signatories	*Position*	*Accreditation Category*
[redacted]	. K Wt: unic I hamiPy	s aebf Mtna Wt: unicPI Fptin: vuea VK
[redacted]	Fanif t Kif t: unic KiPytMmanyI hamiPy	s aebf Mtna Kif t: unicPI Fptin: vuea VK
[redacted]	Fanif t Wt: unic I hamiPy	s aebf Mtna Wt: unicPI Fptin: vuea VK

gu: a	o . f 41T
S f tk Wtdat	o Es . , T2TT6
I éany	o FHAUHEI AOFH8 ALKA gHY LHD
gtf jacy	o VK _T665_gr AFWs g

General Comments

Hha unuéCycue ptf cadMaP MPad bC ALF huva baan davaéf pad 4f m aPyubéPhad inyatnuyif nuéC tacf : niPad ptf cadMaP PMch uP yhf Pa pMbéPhad bC yha OFEgAI AgRAI AF und UEgs 0 Kn hf MPa davaéf pad ptf cadMaP uta 4MéC vuéduyad und uta f 4yan uyyha céanytaqMaPy0

S hata mf iPyMa dayatminuyif n huP baan pat4f tmadI taPMéyP uta tapf tyad f n u dtCwai: hybuPfP0

S hata u tapf tyad eaPP yhun (<) taPMéy iP hi: hat yhun yha LW8 I yhiP muC ba dMa yf ptimutC Pumpéa axytucy/di: aPyuya diéMyif n und/f t inPM4ciany Pumpéa 4f t unuéCPfP0 S hata yha LW8 f 4 u tapf tyad taPMéy di4atP 4f m Pyundutd LW8 I yhiP muC ba dMa yf hi: h mf iPyMa cf nyanyI inPM4ciany Pumpéa (tadMcad wai: hyampéfCad) f t muytix inyat4atanca0

NaCo

Anf nOmf MP = 8 a4atPyf PumpéaP which uta nf yPpaci4cuéaCputyf 4yhiP wf tk f tdat bMy4f tmad putyf 4yha QI ptf caPPéfy

I AF UMmbat = I AF ta: iPytCnMmbat 4f m duyubuPa muinyuinad bCI hamicueAbPytucyP FatvicaP0Hha I hamicueAbPytucyP Fatvica iPu diviPif n f 4yha Amaticun I hamicueFf ciayC0

LW8 = Limiyf 4tapf tyin:

8 gD = 8 aeuyiva gatcanyu: a Di4atanca

= Kndicuya P 4uiéad QI

Laboratory Duplicate (DUP) Report

Hha qMuéyC cf nytf e yatm Lubf tuyf tC DMpéicuya ta4atP yf u tundf méC Paéacyad inytueubf tuyf tC Ppéy0 Lubf tuyf tC dMpéicuyaP ptf vida in4f tmuyif n ta: utdin: mayhf d ptaciPif n und Pumpéa hayatf : anaiyC0 Hha patmiyyad tun: aP 4f t yha 8 aeuyiva gatcany Daviuyif n (8 gD) f 4 Lubf tuyf tC DMpéicuyaP uta Ppaci4ad in ALF s ayhf d QS K-EU/, 2 und uta dapandany f n yha mu: niyMda f 4 taPMéyP in cf mputiPf n yf yha eavae f 4 tapf tyin: o 8 aPMéy < 1T yimaP LW8 c Uf Limiy, 8 aPMéybaywaan 1T und . T yimaP LW8 oT% - 5T%; 8 aPMéy> . T yimaP LW8 oT% - . T%0

FMb-s uytix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5042308)									
Es . , T72. 5-T, 2	Anf nOmf MP	EAT55os f iPyMa l f nyany	----	T0l	%	1. 0	1. 0	T0T	T% - 5T%
Es . , T79. 2-T19	Anf nOmf MP	EAT55os f iPyMa l f nyany	----	T0l	%	150 3	150	10 3	T% - 5T%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5038835)									
Es . , T21, 6-TT6	Anf nOmf MP	Eg. , 1Xogat4Mf tf bMyuna PMéf nic ucid (gr BF)	, 75-7, -5	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf panyuna PMéf nic ucid (gr gaF)	. 7T3-91-6	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf haxuna PMéf nic ucid (gr RxF)	, 55-63-6	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf hapyuna PMéf nic ucid (gr RpF)	, 75-9. -2	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf f cyuna PMéf nic ucid (gr WF)	173, -. , -1	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf dacuna PMéf nic ucid (gr DF)	, , 5-77-,	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5041469)									
Es . , T2TT6-T1T	T665_FD, 97_. , T5T3	Eg. , 1Xogat4Mf tf bMyuna PMéf nic ucid (gr BF)	, 75-7, -5	T0TTT.	m: /k:	T0TTT7	T0TT2	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf panyuna PMéf nic ucid (gr gaF)	. 7T3-91-6	T0TTT.	m: /k:	T0T13	T0TT13	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf haxuna PMéf nic ucid (gr RxF)	, 55-63-6	T0TTT.	m: /k:	T0T195	T0T. . 7	150	T% - . T%
		Eg. , 1Xogat4Mf tf hapyuna PMéf nic ucid (gr RpF)	, 75-9. -2	T0TTT.	m: /k:	T0T61	T0TT5T	190 2	T% - . T%
		Eg. , 1Xogat4Mf tf f cyuna PMéf nic ucid (gr WF)	173, -. , -1	T0TTT.	m: /k:	T0T333	T0T7. .	20T	T% - . T%
		Eg. , 1Xogat4Mf tf dacuna PMéf nic ucid (gr DF)	, , 5-77-,	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5038835)									
Es . , T21, 6-TT6	Anf nOmf MP	Eg. , 1Xogat4Mf tf panyunf ic ucid (gr gaA)	. 7T3-9T-,	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf haxunf ic ucid (gr RxA)	, T7-. 6-6	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf hapyunf ic ucid (gr RpA)	, 75-25-9	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf f cyunf ic ucid (gr WA)	, , 5-37-1	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf nf nunf ic ucid (gr UA)	, 75-95-1	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf dacunf ic ucid (gr DA)	, , 5-73-.	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy

FMo-s uytix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5038835) - continued									
Es . , T21, 6-TT6	Anf nOmf MP	Eg. , 1Xogat4Mf tf Mndacunf ic ucid (gr OnDA)	. T52-96-2	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf df dacunf ic ucid (gr Df DA)	, T7-55-1	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf ytidacunf ic ucid (gr HtDA)	7. 3. 9-96-2	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf yaytudacunf ic ucid (gr HaDA)	, 73-T3-7	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf bMyunf ic ucid (gr BA)	, 75-. . -6	T0TT1	m: /k:	<T0TT1	<T0TT1	T0T	Uf Limiy
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5041469)									
Es . , T2TT6-T1T	T665_FD, 97_. , T5T3	Eg. , 1Xogat4Mf tf panyunf ic ucid (gr gaA)	. 7T3-9T-,	T0TTT.	m: /k:	T0TTT,	T0TTT6	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf haxunf ic ucid (gr RxA)	, T7-. 6-6	T0TTT.	m: /k:	T0TT. 7	T0TT. 2	T0T	T% - 5T%
		Eg. , 1Xogat4Mf tf hapyunf ic ucid (gr RpA)	, 75-25-9	T0TTT.	m: /k:	T0TTT7	T0TTT2	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf f cyunf ic ucid (gr WA)	, , 5-37-1	T0TTT.	m: /k:	T0TT. 1	T0TT. ,	1102	T% - 5T%
		Eg. , 1Xogat4Mf tf nf nunf ic ucid (gr UA)	, 75-95-1	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf dacunf ic ucid (gr DA)	, , 5-73-.	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf Mndacunf ic ucid (gr OnDA)	. T52-96-2	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf df dacunf ic ucid (gr Df DA)	, T7-55-1	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf ytidacunf ic ucid (gr HtDA)	7. 3. 9-96-2	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf yaytudacunf ic ucid (gr HaDA)	, 73-T3-7	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1Xogat4Mf tf bMyunf ic ucid (gr BA)	, 75-. . -6	T0TT1	m: /k:	<T0TT1	<T0TT1	T0T	Uf Limiy
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5038835)									
Es . , T21, 6-TT6	Anf nOmf MP	Eg. , 1Xogat4Mf tf f cyuna PMef numida (r WFA)	756-91-3	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numidf ucayic ucid (s ar WFAA)	. , 55-, 1-9	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1XoU-EyhOepat4Mf tf f cyuna PMef numidf ucayic ucid (Eyr WFAA)	. 991-5T-3	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numida (s ar WFA)	, 15T3-, . -2	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1XoU-EyhOepat4Mf tf f cyuna PMef numida (Eyr WFA)	6151-5T-.	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numidf ayhunf e(s ar WFE)	. 6662-T9-7	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1XoU-EyhOepat4Mf tf f cyuna PMef numidf ayhunf e(Eyr WFE)	1391-99-.	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5041469)									
Es . , T2TT6-T1T	T665_FD, 97_. , T5T3	Eg. , 1Xogat4Mf tf f cyuna PMef numida (r WFA)	756-91-3	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numidf ucayic ucid (s ar WFAA)	. , 55-, 1-9	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1XoU-EyhOepat4Mf tf f cyuna PMef numidf ucayic ucid (Eyr WFAA)	. 991-5T-3	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numida (s ar WFA)	, 15T3-, . -2	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy

gu: a o 6 f 41T
S f tk Wtdat o Es . , T2TT6
I éany o FHAUHEI AOFH8 ALkA gHY LHD
gtf jacy o VK _T665_gr AFWs g

FMo-s uytix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5041469) - continued									
Es . , T2TT6-T1T	T665_FD, 97_. , T5T3	Eg. , 1XoU-EyhCepat4Mf tf f cyuna PMef numida (Eyr WFA)	6151-5T-.	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1XoU-s ayhCepat4Mf tf f cyuna PMef numidf ayhunf e(s ar WFE)	. 6662-T9-7	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1XoU-EyhCepat4Mf tf f cyuna PMef numidf ayhunf e(Eyr WFE)	1391-99-.	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5038835)									
Es . , T21, 6-TT6	Anf nCmf MP	Eg. , 1Xo6o r eMf tf yaef mat PMef nic ucid (6o r HF)	7571. 6-7. -6	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1Xo3o r eMf tf yaef mat PMef nic ucid (3o r HF)	. 7319-97-.	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1Xo2o r eMf tf yaef mat PMef nic ucid (2o r HF)	, 91T2-, 6-6	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1Xo1To r eMf tf yaef mat PMef nic ucid (1To r HF)	1. T. . 3-3T-T	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5041469)									
Es . , T2TT6-T1T	T665_FD, 97_. , T5T3	Eg. , 1Xo6o r eMf tf yaef mat PMef nic ucid (6o r HF)	7571. 6-7. -6	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1Xo3o r eMf tf yaef mat PMef nic ucid (3o r HF)	. 7319-97-.	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1Xo2o r eMf tf yaef mat PMef nic ucid (2o r HF)	, 91T2-, 6-6	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
		Eg. , 1Xo1To r eMf tf yaef mat PMef nic ucid (1To r HF)	1. T. . 3-3T-T	T0TTT5	m: /k:	<T0TTT5	<T0TTT5	T0T	Uf Limiy
EP231P: PFAS Sums (QC Lot: 5038835)									
Es . , T21, 6-TT6	Anf nCmf MP	Eg. , 1XoFMm f 4gr AF	----	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1XoFMm f 4gr RxF und gr WF	, 55-63-6/173, - . , -1	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
		Eg. , 1XoFMm f 4gr AF (S A DE8 LiPy)	----	T0TTT.	m: /k:	<T0TTT.	<T0TTT.	T0T	Uf Limiy
EP231P: PFAS Sums (QC Lot: 5041469)									
Es . , T2TT6-T1T	T665_FD, 97_. , T5T3	Eg. , 1XoFMm f 4gr AF	----	T0TTT.	m: /k:	T0T92,	T0IT9	1T0T	T% - . T%
		Eg. , 1XoFMm f 4gr RxF und gr WF	, 55-63-6/173, - . , -1	T0TTT.	m: /k:	T0T231	T0T969	90T	T% - . T%
		Eg. , 1XoFMm f 4gr AF (S A DE8 LiPy)	----	T0TTT.	m: /k:	T0T9. 3	T0IT.	90T	T% - . T%

gu: a	o 5 f 41T
S f tk Wtdat	o Es . , T2TT6
I éany	o FHAUHEI AOFH8 ALkA gHY LHD
gtf jacy	o VK _T665_gr AFWs g

Method Blank (MB) and Laboratory Control Sample (LCS) Report

Hha qMuéyC cf nytf e yatm s ayhf d / Lubf tuyf tC Beunk ta4atP yf un unueOya 4aa muytix yf which ue tau: anyP uta uddad in yha Puma vf éMmaP f t ptf pf tyif nP uP MPad in Pyundutd Pumpea ptaputuyif n0 Hha pMtpf Pa f 4 yhiP QI putumayat iP yf mf niyf t pf yanyiue eubf tuyf tC cf nyuminuyif n0 Hha qMuéyC cf nytf e yatm Lubf tuyf tC I f nytf e Fumpea (LI F) ta4atP yf u catyi4ad ta4atanca muyatiué f t u knf wn inyat4atanca 4aa muytix Ppikad wiyh yut: ay unueOyaP0Hha pMtpf Pa f 4yhiP QI putumayat iP yf mf niyf t mayhf d ptaciPtf n und uccMucCindapandanyf 4Pumpea muytix0DChumic 8 acf vatCLimiyPuta buPad f n PyuyiPyicueavuéMuyif n f 4ptf caPPad LI F0

FMo-s uytix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	*CAS Number*	*LOR*	*Unit*	*Result*	*Concentration*	*LCS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5038835)								
Eg. , 1Xogat4éMf tf bMyuna PMéf nic ucid (gr BF)	, 75-7, -5	T0TTT.	m: /k:	<T0TTT.	T0TT111 m: /k:	9. 05	7. 0T	1. 2
Eg. , 1Xogat4éMf tf panyuna PMéf nic ucid (gr gaF)	. 7T3-91-6	T0TTT.	m: /k:	<T0TTT.	T0TT112 m: /k:	9, 02	7, 0T	1. ,
Eg. , 1Xogat4éMf tf haxuna PMéf nic ucid (gr RxF)	, 55-63-6	T0TTT.	m: /k:	<T0TTT.	T0TT116 m: /k:	9T0	370T	1, T
Eg. , 1Xogat4éMf tf hapyuna PMéf nic ucid (gr RpF)	, 75-9. -2	T0TTT.	m: /k:	<T0TTT.	T0TT119 m: /k:	1T1	7T0T	1, .
Eg. , 1Xogat4éMf tf f cyuna PMéf nic ucid (gr WF)	173, -. , -1	T0TTT.	m: /k:	<T0TTT.	T0TT113 m: /k:	950T	320T	1, 3
Eg. , 1Xogat4éMf tf dacuna PMéf nic ucid (gr DF)	, , 5-77-,	T0TTT.	m: /k:	<T0TTT.	T0TT1. 1 m: /k:	930	590T	1, 6
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5041469)								
Eg. , 1Xogat4éMf tf bMyuna PMéf nic ucid (gr BF)	, 75-7, -5	T0TTT.	m: /k:	<T0TTT.	T0TT111 m: /k:	250Z	7. 0T	1. 2
Eg. , 1Xogat4éMf tf panyuna PMéf nic ucid (gr gaF)	. 7T3-91-6	T0TTT.	m: /k:	<T0TTT.	T0TT112 m: /k:	1T6	7, 0T	1. ,
Eg. , 1Xogat4éMf tf haxuna PMéf nic ucid (gr RxF)	, 55-63-6	T0TTT.	m: /k:	<T0TTT.	T0TT116 m: /k:	9T06	370T	1, T
Eg. , 1Xogat4éMf tf hapyuna PMéf nic ucid (gr RpF)	, 75-9. -2	T0TTT.	m: /k:	<T0TTT.	T0TT119 m: /k:	11.	7T0T	1, .
Eg. , 1Xogat4éMf tf f cyuna PMéf nic ucid (gr WF)	173, -. , -1	T0TTT.	m: /k:	<T0TTT.	T0TT113 m: /k:	950	320T	1, 3
Eg. , 1Xogat4éMf tf dacuna PMéf nic ucid (gr DF)	, , 5-77-,	T0TTT.	m: /k:	<T0TTT.	T0TT1. 1 m: /k:	250	590T	1, 6
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5038835)								
Eg. , 1Xogat4éMf tf bMyunf ic ucid (gr BA)	, 75-. . -6	T0TT1	m: /k:	<T0TT1	T0TT3. 5 m: /k:	1T.	710T	1, 5
Eg. , 1Xogat4éMf tf panyunf ic ucid (gr gaA)	. 7T3-9T-,	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	9105	390T	1, .
Eg. , 1Xogat4éMf tf haxunf ic ucid (gr RxA)	, T7-. 6-6	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	250	7T0T	1, .
Eg. , 1Xogat4éMf tf hapyunf ic ucid (gr RpA)	, 75-25-9	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	9T0I	710T	1, 1
Eg. , 1Xogat4éMf tf f cyunf ic ucid (gr WA)	, , 5-37-1	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	910Y	390T	1, ,
Eg. , 1Xogat4éMf tf nf nunf ic ucid (gr UA)	, 75-95-1	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	950	7. 0T	1. 9
Eg. , 1Xogat4éMf tf dacunf ic ucid (gr DA)	, , 5-73-.	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	7909	390T	1, ,
Eg. , 1Xogat4éMf tf Mndacunf ic ucid (gr OnDA)	. T52-96-2	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	220T	360T	1, 3
Eg. , 1Xogat4éMf tf df dacunf ic ucid (gr Df DA)	, T7-55-1	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	260T	390T	1, 5
Eg. , 1Xogat4éMf tf ytidacunf ic ucid (gr HtDA)	7. 3. 9-96-2	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	2109	330T	1, 9
Eg. , 1Xogat4éMf tf yaytudacunf ic ucid (gr HaDA)	, 73-T3-7	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	11T	390T	1, ,
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5041469)								
Eg. , 1Xogat4éMf tf bMyunf ic ucid (gr BA)	, 75-. . -6	T0TT1	m: /k:	<T0TT1	T0TT3. 5 m: /k:	9, 03	710T	1, 5
Eg. , 1Xogat4éMf tf panyunf ic ucid (gr gaA)	. 7T3-9T-,	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	230Y	390T	1, .
Eg. , 1Xogat4éMf tf haxunf ic ucid (gr RxA)	, T7-. 6-6	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	270Y	7T0T	1, .
Eg. , 1Xogat4éMf tf hapyunf ic ucid (gr RpA)	, 75-25-9	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	9T06	710T	1, 1

gu: a	o 3 f 41T
S f tk Wtdat	o Es . , T2TT6
I éany	o FHAUHEI AOFH8 ALkA gHY LHD
gtf jacy	o VK _T665_gr AFWs g

FMb-s uytix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5041469) - continued								
Eg. , 1Xogat4Mf tf f cyunf ic ucid (gr WA)	, , 5-37-1	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	230T	390T	1, ,
Eg. , 1Xogat4Mf tf nf nunf ic ucid (gr UA)	, 75-95-1	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	220	7. 0T	1. 9
Eg. , 1Xogat4Mf tf dacunf ic ucid (gr DA)	, , 5-73-.	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	9T0T	390T	1, ,
Eg. , 1Xogat4Mf tf Mndacunf ic ucid (gr OnDA)	. T52-96-2	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	2506	360T	1, 3
Eg. , 1Xogat4Mf tf df dacunf ic ucid (gr Df DA)	, T7-55-1	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	260	390T	1, 5
Eg. , 1Xogat4Mf tf ytidacunf ic ucid (gr HtDA)	7. 3. 9-96-2	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	2, 06	330T	1, 9
Eg. , 1Xogat4Mf tf yaytudacunf ic ucid (gr HaDA)	, 73-T3-7	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	2307	390T	1, ,
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5038835)								
Eg. , 1Xogat4Mf tf f cyuna PMef numida (r WFA)	756-91-3	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	2303	370T	1, 7
Eg. , 1XoU-s ayhCepat4Mf tf f cyuna PMef numida (s ar WFA)	, 15T3-, . -2	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	116	7T0T	1, T
Eg. , 1XoU-EyhCepat4Mf tf f cyuna PMef numida (Eyr WFA)	6151-5T-.	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	2. 0	7T0T	1, T
Eg. , 1XoU-s ayhCepat4Mf tf f cyuna PMef numidf ayhunf e (s ar WFE)	. 6662-T9-7	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	2507	7T0T	1, T
Eg. , 1XoU-EyhCepat4Mf tf f cyuna PMef numidf ayhunf e (Eyr WFE)	1391-99-.	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	9202	7T0T	1, T
Eg. , 1XoU-s ayhCepat4Mf tf f cyuna PMef numidf ucayic ucid (s ar WFAA)	. , 55-, 1-9	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	1T7	3, 0T	166
Eg. , 1XoU-EyhCepat4Mf tf f cyuna PMef numidf ucayic ucid (Eyr WFAA)	. 991-5T-3	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	2203	310T	1, 9
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5041469)								
Eg. , 1Xogat4Mf tf f cyuna PMef numida (r WFA)	756-91-3	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	9505	370T	1, 7
Eg. , 1XoU-s ayhCepat4Mf tf f cyuna PMef numida (s ar WFA)	, 15T3-, . -2	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	9, 05	7T0T	1, T
Eg. , 1XoU-EyhCepat4Mf tf f cyuna PMef numida (Eyr WFA)	6151-5T-.	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	9107	7T0T	1, T
Eg. , 1XoU-s ayhCepat4Mf tf f cyuna PMef numidf ayhunf e (s ar WFE)	. 6662-T9-7	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	960T	7T0T	1, T
Eg. , 1XoU-EyhCepat4Mf tf f cyuna PMef numidf ayhunf e (Eyr WFE)	1391-99-.	T0TTT5	m: /k:	<T0TTT5	T0TT, 1. m: /k:	9106	7T0T	1, T
Eg. , 1XoU-s ayhCepat4Mf tf f cyuna PMef numidf ucayic ucid (s ar WFAA)	. , 55-, 1-9	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	2505	3, 0T	166
Eg. , 1XoU-EyhCepat4Mf tf f cyuna PMef numidf ucayic ucid (Eyr WFAA)	. 991-5T-3	T0TTT.	m: /k:	<T0TTT.	T0TT1. 5 m: /k:	7903	310T	1, 9
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5038835)								
Eg. , 1Xo6o reMf tf yaef mat PMef nic ucid (6o r HF)	7571. 6-7. -6	T0TTT5	m: /k:	<T0TTT5	T0TT117 m: /k:	9102	3. 0T	165
Eg. , 1Xo3o reMf tf yaef mat PMef nic ucid (3o r HF)	. 7319-97-.	T0TTT5	m: /k:	<T0TTT5	T0TT119 m: /k:	11.	360T	16T
Eg. , 1Xo2o reMf tf yaef mat PMef nic ucid (2o r HF)	, 91T2-, 6-6	T0TTT5	m: /k:	<T0TTT5	T0TT1. m: /k:	9902	350T	1, 7
Eg. , 1Xo1To reMf tf yaef mat PMef nic ucid (1To r HF)	1. T. . 3-3T-T	T0TTT5	m: /k:	<T0TTT5	T0TT1. 1 m: /k:	7. 0T	7T0T	1, T

gu: a o 7 f 41T
S f tk Wtdat o Es . , T2TT6
I éany o FHAUHEI AOFH8 ALkA gHY LHD
gtf jacy o VK _T665_gr AFWs g

FMb-s uytix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5041469)								
Eg. , 1Xo6o r eM tf yaef mat PMef nic ucid (6o r HF)	7571. 6-7. -6	T0TT5	m: /k:	<T0TT5	T0TT117 m: /k:	230	3. 0T	165
Eg. , 1Xo3o r eM tf yaef mat PMef nic ucid (3o r HF)	. 7319-97-.	T0TT5	m: /k:	<T0TT5	T0TT119 m: /k:	9, 07	360T	16T
Eg. , 1Xo2o r eM tf yaef mat PMef nic ucid (2o r HF)	, 91T2-, 6-6	T0TT5	m: /k:	<T0TT5	T0TT1. m: /k:	1TT	350T	1, 7
Eg. , 1Xo1To r eM tf yaef mat PMef nic ucid (1To r HF)	1. T. . 3-3T-T	T0TT5	m: /k:	<T0TT5	T0TT1. 1 m: /k:	1T5	7T0T	1, T
EP231P: PFAS Sums (QCLot: 5038835)								
Eg. , 1XoFMm f 4gr AF	---	T0TTT.	m: /k:	<T0TTT.	----	----	----	----
Eg. , 1XoFMm f 4gr RxF und gr WF	, 55-63-6/17 3, -. , -1	T0TTT.	m: /k:	<T0TTT.	----	----	----	----
Eg. , 1XoFMm f 4gr AF (S A DE8 LiPy)	---	T0TTT.	m: /k:	<T0TTT.	----	----	----	----
EP231P: PFAS Sums (QCLot: 5041469)								
Eg. , 1XoFMm f 4gr AF	---	T0TTT.	m: /k:	<T0TTT.	----	----	----	----
Eg. , 1XoFMm f 4gr RxF und gr WF	, 55-63-6/17 3, -. , -1	T0TTT.	m: /k:	<T0TTT.	----	----	----	----
Eg. , 1XoFMm f 4gr AF (S A DE8 LiPy)	---	T0TTT.	m: /k:	<T0TTT.	----	----	----	----

FMb-s uytix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5040519)								
Eg. , 1Xogat4M tf bMyuna PMef nic ucid (gr BF)	, 75-7, -5	T0r.	µ: /L	<T0r.	T0 . . µ: /L	9305	7. 0T	1, T
Eg. , 1Xogat4M tf panyuna PMef nic ucid (gr gaF)	. 7T3-91-6	T0r.	µ: /L	<T0r.	T0 , 5 µ: /L	1T7	710T	1. 7
Eg. , 1Xogat4M tf haxuna PMef nic ucid (gr RxF)	, 55-63-6	T0r1	µ: /L	<T0r1	T0 . 2 µ: /L	950	320T	1, 1
Eg. , 1Xogat4M tf hapyuna PMef nic ucid (gr RpF)	, 75-9. -2	T0r.	µ: /L	<T0r.	T0 , 2 µ: /L	111	390T	1, 6
Eg. , 1Xogat4M tf f cyuna PMef nic ucid (gr WF)	173, -. , -1	T0r1	µ: /L	<T0r1	T0 , . µ: /L	9901	350T	16T
Eg. , 1Xogat4M tf dacuna PMef nic ucid (gr DF)	, , 5-77-,	T0r.	µ: /L	<T0r.	T0 61 µ: /L	2. 01	5, 0T	16.
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5040519)								
Eg. , 1Xogat4M tf bMyunf ic ucid (gr BA)	, 75-. . -6	T01	µ: /L	<T01	10 5 µ: /L	990	7, 0T	1. 9
Eg. , 1Xogat4M tf panyunf ic ucid (gr gaA)	. 7T3-9T-,	T0r.	µ: /L	<T0r.	T0 5 µ: /L	9, 07	7. 0T	1. 9
Eg. , 1Xogat4M tf haxunf ic ucid (gr RxA)	, T7-. 6-6	T0r.	µ: /L	<T0r.	T0 5 µ: /L	2902	7. 0T	1. 9
Eg. , 1Xogat4M tf hapyunf ic ucid (gr RpA)	, 75-25-9	T0r.	µ: /L	<T0r.	T0 5 µ: /L	9, 01	7. 0T	1, T
Eg. , 1Xogat4M tf f cyunf ic ucid (gr WA)	, , 5-37-1	T0r1	µ: /L	<T0r1	T0 5 µ: /L	9. 02	710T	1, ,
Eg. , 1Xogat4M tf nf nunf ic ucid (gr UA)	, 75-95-1	T0r.	µ: /L	<T0r.	T0 5 µ: /L	960	390T	1, T
Eg. , 1Xogat4M tf dacunf ic ucid (gr DA)	, , 5-73-.	T0r.	µ: /L	<T0r.	T0 5 µ: /L	9. 02	710T	1. 9
Eg. , 1Xogat4M tf Mndacunf ic ucid (gr OnDA)	. T52-96-2	T0r.	µ: /L	<T0r.	T0 5 µ: /L	9T05	390T	1, ,
Eg. , 1Xogat4M tf df dacunf ic ucid (gr Df DA)	, T7-55-1	T0r.	µ: /L	<T0r.	T0 5 µ: /L	970T	7. 0T	1, 6
Eg. , 1Xogat4M tf ytidacunf ic ucid (gr HtDA)	7. 3. 9-96-2	T0r.	µ: /L	<T0r.	T0 5 µ: /L	2507	350T	166

gu: a	o 2 f 41T
S f tk Wtdat	o Es . , T2TT6
I éany	o FHAUHEI AOFH8 ALkA gHY LHD
gtf jacy	o VK _T665_gr AFWs g

FMo-s uytix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5040519) - continued								
Eg. , 1Xogat4Mf tf yaytudacunf ic ucid (gr HaDA)	, 73-T3-7	T0T5	µ: /L	<T0T5	T03. 5 µ: /L	1T,	710T	1, .
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5040519)								
Eg. , 1Xogat4Mf tf f cyuna PMef numida (r WFA)	756-91-3	T0T.	µ: /L	<T0T.	T0 5 µ: /L	9302	370T	1, 7
Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numida (s ar WFA)	, 15T3-, . -2	T0T5	µ: /L	<T0T5	T03. 5 µ: /L	1T7	320T	161
Eg. , 1XoU-EyhOepat4Mf tf f cyuna PMef numida (Eyr WFA)	6151-5T-.	T0T5	µ: /L	<T0T5	T03. 5 µ: /L	1T.	7T0T	1, T
Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numidf ayhunf e (s ar WFE)	. 6662-T9-7	T0T5	µ: /L	<T0T5	T03. 5 µ: /L	1TT	7T0T	1, T
Eg. , 1XoU-EyhOepat4Mf tf f cyuna PMef numidf ayhunf e (Eyr WFE)	1391-99-.	T0T5	µ: /L	<T0T5	T03. 5 µ: /L	920	7T0T	1, T
Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numidf ucayic ucid (s ar WFAA)	. , 55-, 1-9	T0T.	µ: /L	<T0T.	T0 5 µ: /L	1T5	350T	1, 3
Eg. , 1XoU-EyhOepat4Mf tf f cyuna PMef numidf ucayic ucid (Eyr WFAA)	. 991-5T-3	T0T.	µ: /L	<T0T.	T0 5 µ: /L	270T	310T	1, 5
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5040519)								
Eg. , 1Xo6o r dMf tf yaef mat PMef nic ucid (6o r HF)	7571. 6-7. -6	T0T5	µ: /L	<T0T5	T0 , 6 µ: /L	9305	3, 0T	16,
Eg. , 1Xo3o r dMf tf yaef mat PMef nic ucid (3o r HF)	. 7319-97-.	T0T5	µ: /L	<T0T5	T0 , 2 µ: /L	1T5	360T	16T
Eg. , 1Xo2o r dMf tf yaef mat PMef nic ucid (2o r HF)	, 91T2-, 6-6	T0T5	µ: /L	<T0T5	T0 6 µ: /L	920T	370T	1, 2
Eg. , 1Xo1To r dMf tf yaef mat PMef nic ucid (1To r HF)	1. T. . 3-3T-T	T0T5	µ: /L	<T0T5	T0 6. µ: /L	9. 0I	7T0T	1, T
EP231P: PFAS Sums (QCLot: 5040519)								
Eg. , 1XoFMn f 4gr AF	----	T0T1	µ: /L	<T0T1	----	----	----	----
Eg. , 1XoFMn f 4gr RxF und gr WF	, 55-63-6/17 3, -. , -1	T0T1	µ: /L	<T0T1	----	----	----	----
Eg. , 1XoFMn f 4gr AF (S A DE8 LiPy)	----	T0T1	µ: /L	<T0T1	----	----	----	----

Matrix Spike (MS) Report

Hha qMuéyC cf nytf e yatm s uytix Fpika (s F) ta4atP yf un inytuebf tuyf tC Ppéy Pumpea Ppikad wiyh u taptaPanyuyiva Pay f 4 yut: ay unueOyaP0 Hha pMtpf Pa f 4 yhiP QI putumayat iP yf mf niyf t pf yanyiue muytix a44acyP f n unueOya tacf vatiaP0F yuyic 8 acf vatCLimiyP uP pat eubf tuyf tCDuyu QMuéyCWbjacyivaP (DQWP)0Kdauetacf vatCtun: aPPyuyad muCba wuivad in yha avanyf 4Pumpea muytix inyat4atanca0

FMo-s uytix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5038835)							
Es . , T21, 6-TT,	Anf nOmf MP	Eg. , 1Xogat4Mf tf bMyuna PMef nic ucid (gr BF)	, 75-7, -5	T0TT111 m: /k:	2701	7. 0T	1. 2
		Eg. , 1Xogat4Mf tf panyuna PMef nic ucid (gr gaF)	. 7T3-91-6	T0TT112 m: /k:	7, 07	7, 0T	1. ,
		Eg. , 1Xogat4Mf tf haxuna PMef nic ucid (gr RxF)	, 55-63-6	T0TT116 m: /k:	9701	370T	1, T
		Eg. , 1Xogat4Mf tf hapyuna PMef nic ucid (gr RpF)	, 75-9. -2	T0TT119 m: /k:	2501	7T0T	1, .
		Eg. , 1Xogat4Mf tf f cyuna PMef nic ucid (gr WF)	173, -. , -1	T0TT113 m: /k:	2501	320T	1, 3

gu: a o 9 f 41T
S f tk Wtdat o Es . , T2TT6
I éany o FHAUHEI AOFH8 ALkA gHY LHD
gtf jacy o VK _T665_gr AFWs g

FMo-s uytix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5038835) - continued							
Es . , T21, 6-TT,	Anf nOmf MP	Eg. , 1Xogat4Mf tf dacuna PMef nic ucid (gr DF)	, , 5-77-,	T0TT1. 1 m: /k:	2. 02	590T	1, 6
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5041469)							
Es . , T2TT6-T11	T665_FD6TT_. , T5T3	Eg. , 1Xogat4Mf tf bMyuna PMef nic ucid (gr BF)	, 75-7, -5	T0TT111 m: /k:	96Q	7. 0T	1. 2
		Eg. , 1Xogat4Mf tf panyuna PMef nic ucid (gr gaF)	. 7T3-91-6	T0TT112 m: /k:	1. ,	7, 0T	1. ,
		Eg. , 1Xogat4Mf tf haxuna PMef nic ucid (gr RxF)	, 55-63-6	T0TT116 m: /k:	# Uf y Dayatminad	370T	1, T
		Eg. , 1Xogat4Mf tf hapyuna PMef nic ucid (gr RpF)	, 75-9. -2	T0TT119 m: /k:	1. 9	7T0T	1, .
		Eg. , 1Xogat4Mf tf f cyuna PMef nic ucid (gr WF)	173, -. , -1	T0TT113 m: /k:	# Uf y Dayatminad	320T	1, 3
		Eg. , 1Xogat4Mf tf dacuna PMef nic ucid (gr DF)	, , 5-77-,	T0TT1. 1 m: /k:	2, 0T	590T	1, 6
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5038835)							
Es . , T21, 6-TT,	Anf nOmf MP	Eg. , 1Xogat4Mf tf bMyunf ic ucid (gr BA)	, 75-. . -6	T0TT3. 5 m: /k:	790 6	710T	1, 5
		Eg. , 1Xogat4Mf tf panyunf ic ucid (gr gaA)	. 7T3-9T-,	T0TT1. 5 m: /k:	2, 0 3	390T	1, .
		Eg. , 1Xogat4Mf tf haxunf ic ucid (gr RxA)	, T7-. 6-6	T0TT1. 5 m: /k:	210T	7T0T	1, .
		Eg. , 1Xogat4Mf tf hapyunf ic ucid (gr RpA)	, 75-25-9	T0TT1. 5 m: /k:	9. 0	710T	1, 1
		Eg. , 1Xogat4Mf tf f cyunf ic ucid (gr WA)	, , 5-37-1	T0TT1. 5 m: /k:	9, 0 3	390T	1, ,
		Eg. , 1Xogat4Mf tf nf nunf ic ucid (gr UA)	, 75-95-1	T0TT1. 5 m: /k:	250T	7. 0T	1. 9
		Eg. , 1Xogat4Mf tf dacunf ic ucid (gr DA)	, , 5-73-.	T0TT1. 5 m: /k:	720T	390T	1, ,
		Eg. , 1Xogat4Mf tf Mndacunf ic ucid (gr OnDA)	. T52-96-2	T0TT1. 5 m: /k:	260 6	360T	1, 3
		Eg. , 1Xogat4Mf tf df dacunf ic ucid (gr Df DA)	, T7-55-1	T0TT1. 5 m: /k:	230T	390T	1, 5
		Eg. , 1Xogat4Mf tf ytidacunf ic ucid (gr HtDA)	7. 3. 9-96-2	T0TT1. 5 m: /k:	720 2	330T	1, 9
		Eg. , 1Xogat4Mf tf yaytudacunf ic ucid (gr HaDA)	, 73-T3-7	T0TT, 1. m: /k:	210 1	390T	1, ,
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5041469)							
Es . , T2TT6-T11	T665_FD6TT_. , T5T3	Eg. , 1Xogat4Mf tf bMyunf ic ucid (gr BA)	, 75-. . -6	T0TT3. 5 m: /k:	750	710T	1, 5
		Eg. , 1Xogat4Mf tf panyunf ic ucid (gr gaA)	. 7T3-9T-,	T0TT1. 5 m: /k:	7T0T	390T	1, .
		Eg. , 1Xogat4Mf tf haxunf ic ucid (gr RxA)	, T7-. 6-6	T0TT1. 5 m: /k:	730 5	7T0T	1, .
		Eg. , 1Xogat4Mf tf hapyunf ic ucid (gr RpA)	, 75-25-9	T0TT1. 5 m: /k:	7. 0	710T	1, 1
		Eg. , 1Xogat4Mf tf f cyunf ic ucid (gr WA)	, , 5-37-1	T0TT1. 5 m: /k:	710T	390T	1, ,
		Eg. , 1Xogat4Mf tf nf nunf ic ucid (gr UA)	, 75-95-1	T0TT1. 5 m: /k:	760 2	7. 0T	1. 9
		Eg. , 1Xogat4Mf tf dacunf ic ucid (gr DA)	, , 5-73-.	T0TT1. 5 m: /k:	710	390T	1, ,
		Eg. , 1Xogat4Mf tf Mndacunf ic ucid (gr OnDA)	. T52-96-2	T0TT1. 5 m: /k:	390 7	360T	1, 3
		Eg. , 1Xogat4Mf tf df dacunf ic ucid (gr Df DA)	, T7-55-1	T0TT1. 5 m: /k:	750 7	390T	1, 5
		Eg. , 1Xogat4Mf tf ytidacunf ic ucid (gr HtDA)	7. 3. 9-96-2	T0TT1. 5 m: /k:	320T	330T	1, 9
		Eg. , 1Xogat4Mf tf yaytudacunf ic ucid (gr HaDA)	, 73-T3-7	T0TT, 1. m: /k:	# 350	390T	1, ,
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5038835)							
Es . , T21, 6-TT,	Anf nOmf MP	Eg. , 1Xogat4Mf tf f cyuna PMef numida (r WFA)	756-91-3	T0TT1. 5 m: /k:	750	370T	1, 7
		Eg. , 1XoU-s ayhOepat4Mf tf f cyuna PMef numida (s ar WFA)	, 15T3-, . -2	T0TT, 1. m: /k:	260 6	7T0T	1, T

gu: a o 1T f 41T
S f tk Wtdat o Es . , T2TT6
I éany o FHAUHEI AOFH8 ALkA gHY LHD
gtf jacy o VK _T665_gr AFWs g

FMo-s uytix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5038835) - continued							
Es . , T21, 6-TT,	Anf nOmf MP	Eg. , 1XoU-EyhOepat4BMf tf f cyuna PMef numida (Eyr WFA)	6151-5T-.	T0TT, 1. m: /k:	2306	7T0T	1, T
		Eg. , 1XoU-s ayhOepat4BMf tf f cyuna PMef numidf ayhunf e (s ar WFE)	. 6662-T9-7	T0TT, 1. m: /k:	9TQ	7T0T	1, T
		Eg. , 1XoU-EyhOepat4BMf tf f cyuna PMef numidf ayhunf e (Eyr WFE)	1391-99-.	T0TT, 1. m: /k:	2607	7T0T	1, T
		Eg. , 1XoU-s ayhOepat4BMf tf f cyuna PMef numidf ucayic ucid (s ar WFAA)	. , 55-, 1-9	T0TT1. 5 m: /k:	# 5, 0	3, 0T	166
		Eg. , 1XoU-EyhOepat4BMf tf f cyuna PMef numidf ucayic ucid (Eyr WFAA)	. 991-5T-3	T0TT1. 5 m: /k:	# 5603	310T	1, 9
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5041469)							
Es . , T2TT6-T11	T665_FD6TT_. , T5T3	Eg. , 1Xogat4BMf tf f cyuna PMef numida (r WFA)	756-91-3	T0TT1. 5 m: /k:	7602	370T	1, 7
		Eg. , 1XoU-s ayhOepat4BMf tf f cyuna PMef numida (s ar WFA)	, 15T3-, . -2	T0TT, 1. m: /k:	2309	7T0T	1, T
		Eg. , 1XoU-EyhOepat4BMf tf f cyuna PMef numida (Eyr WFA)	6151-5T-.	T0TT, 1. m: /k:	2, 0T	7T0T	1, T
		Eg. , 1XoU-s ayhOepat4BMf tf f cyuna PMef numidf ayhunf e (s ar WFE)	. 6662-T9-7	T0TT, 1. m: /k:	7903	7T0T	1, T
		Eg. , 1XoU-EyhOepat4BMf tf f cyuna PMef numidf ayhunf e (Eyr WFE)	1391-99-.	T0TT, 1. m: /k:	2. 07	7T0T	1, T
		Eg. , 1XoU-s ayhOepat4BMf tf f cyuna PMef numidf ucayic ucid (s ar WFAA)	. , 55-, 1-9	T0TT1. 5 m: /k:	# Ufy Dayatminad	3, 0T	166
		Eg. , 1XoU-EyhOepat4BMf tf f cyuna PMef numidf ucayic ucid (Eyr WFAA)	. 991-5T-3	T0TT1. 5 m: /k:	# Ufy Dayatminad	310T	1, 9
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5038835)							
Es . , T21, 6-TT,	Anf nOmf MP	Eg. , 1Xo6o r eMf tf yae mat PMef nic ucid (6o r HF)	7571. 6-7. -6	T0TT117 m: /k:	7706	3. 0T	165
		Eg. , 1Xo3o r eMf tf yae mat PMef nic ucid (3o r HF)	. 7319-97-.	T0TT119 m: /k:	9, 0	360T	16T
		Eg. , 1Xo2o r eMf tf yae mat PMef nic ucid (2o r HF)	, 91T2-, 6-6	T0TT1. m: /k:	2T0T	350T	1, 7
		Eg. , 1Xo1To r eMf tf yae mat PMef nic ucid (1To r HF)	1. T. . 3-3T-T	T0TT1. 1 m: /k:	# 3501	7T0T	1, T
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5041469)							
Es . , T2TT6-T11	T665_FD6TT_. , T5T3	Eg. , 1Xo6o r eMf tf yae mat PMef nic ucid (6o r HF)	7571. 6-7. -6	T0TT117 m: /k:	750	3. 0T	165
		Eg. , 1Xo3o r eMf tf yae mat PMef nic ucid (3o r HF)	. 7319-97-.	T0TT119 m: /k:	3905	360T	16T
		Eg. , 1Xo2o r eMf tf yae mat PMef nic ucid (2o r HF)	, 91T2-, 6-6	T0TT1. m: /k:	3305	350T	1, 7
		Eg. , 1Xo1To r eMf tf yae mat PMef nic ucid (1To r HF)	1. T. . 3-3T-T	T0TT1. 1 m: /k:	760	7T0T	1, T

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2308004**	Page	: 1 of 6
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: +6138549 9609
Project	: VIC_0445_PFASOMP	Date Samples Received	: 08-May-2023
Site	: VIC_0445_PFASOMP_PO1	Issue Date	: 15-May-2023
Sampler	: [redacted]	No. of samples received	: 9
Order number	: -	No. of samples analysed	: 9

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EM2308004--011	0445_SD400_230506	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM2308004--011	0445_SD400_230506	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	65.2 %	69.0-133%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EM2308134--003	Anonymous	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	53.2 %	63.0-144%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EM2308134--003	Anonymous	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	54.6 %	61.0-139%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EM2308134--003	Anonymous	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	65.1 %	70.0-130%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / *Client Sample ID(s)*	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
0445_SD396_ 230506,	0445_SD397_230506,	**06-May-2023**	**----**	----	----	**11-May-2023**	20-May-2023	✓
0445_SD400_230506								
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0445_SD396_ 230506,	0445_SD397_230506,	**06-May-2023**	**11-May-2023**	02-Nov-2023	✓	**12-May-2023**	20-Jun-2023	✓
0445_SD400_230506								
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
0445_SD396_ 230506,	0445_SD397_230506,	**06-May-2023**	**11-May-2023**	02-Nov-2023	✓	**12-May-2023**	20-Jun-2023	✓
0445_SD400_230506								
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X)								
0445_SD396_ 230506,	0445_SD397_230506,	**06-May-2023**	**11-May-2023**	02-Nov-2023	✓	**12-May-2023**	20-Jun-2023	✓
0445_SD400_230506								
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0445_SD396_ 230506,	0445_SD397_230506,	**06-May-2023**	**11-May-2023**	02-Nov-2023	✓	**12-May-2023**	20-Jun-2023	✓
0445_SD400_230506								
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X)								
0445_SD396_ 230506,	0445_SD397_230506,	**06-May-2023**	**11-May-2023**	02-Nov-2023	✓	**12-May-2023**	20-Jun-2023	✓
0445_SD400_230506								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445_SW396_ 230506,	0445_SW397_ 230506,	**06-May-2023**	**10-May-2023**	02-Nov-2023	✓	**12-May-2023**	02-Nov-2023	✓
0445_SW400_ 230506,	0445_SW401_ 230506,							
0445_SW471_ 230506,	0445_SW487_ 230506							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0445_SW396_ 230506,	0445_SW397_ 230506,	**06-May-2023**	**10-May-2023**	02-Nov-2023	✓	**12-May-2023**	02-Nov-2023	✓
0445_SW400_ 230506,	0445_SW401_ 230506,							
0445_SW471_ 230506,	0445_SW487_ 230506							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0445_SW396_ 230506, 0445_SW397_ 230506, 0445_SW400_ 230506, 0445_SW401_ 230506, 0445_SW471_ 230506, 0445_SW487_ 230506	**06-May-2023**	**10-May-2023**	02-Nov-2023	✓	**12-May-2023**	02-Nov-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_SW396_ 230506, 0445_SW397_ 230506, 0445_SW400_ 230506, 0445_SW401_ 230506, 0445_SW471_ 230506, 0445_SW487_ 230506	**06-May-2023**	**10-May-2023**	02-Nov-2023	✓	**12-May-2023**	02-Nov-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_SW396_ 230506, 0445_SW397_ 230506, 0445_SW400_ 230506, 0445_SW401_ 230506, 0445_SW471_ 230506, 0445_SW487_ 230506	**06-May-2023**	**10-May-2023**	02-Nov-2023	✓	**12-May-2023**	02-Nov-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	13	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	13	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN OF CUSTODY

ALS COC#: 51619 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_PO1

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 08/05/23 – 13:48

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_SD396_230506		06/05/2023 01:35 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
002	0445_SD397_230506		06/05/2023 01:30 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
003	0445_SD400_230506		06/05/2023 01:29 PM	SOIL	ALS: 3 Non ALS: 0	No		X		Extra containers for lab qc
004	0445_SW396_230506		06/05/2023 01:32 PM	WATER	ALS: 2 Non ALS: 0	No	X			
005	0445_SW397_230506		06/05/2023 01:33 PM	WATER	ALS: 2 Non ALS: 0	No	X			
006	0445_SW400_230506		06/05/2023 01:32 PM	WATER	ALS: 2 Non ALS: 0	No	X			
007	0445_SW401_230506		06/05/2023 01:34 PM	WATER	ALS: 2 Non ALS: 0	No	X			
008	0445_SW471_230506		06/05/2023 01:31 PM	WATER	ALS: 2 Non ALS: 0	No	X			
009	0445_SW487_230506		06/05/2023 01:35 PM	WATER	ALS: 2 Non ALS: 0	No	X			

#10 = 11

SCANNED

Environmental Division
Melbourne
Work Order Reference
EM2308004

BW 9/5

Telephone : +61-3-8549 9600

CERTIFICATE OF ANALYSIS

Work Order	: **EM2308009**	Page	: 1 of 15
Amendment	: **1**		
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: LEVEL 21 28 FRESHWATER PLACE SOUTHBANK VIC, AUSTRALIA 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9609
Project	: VIC_0445_PFASOMP_23	Date Samples Received	: 08-May-2023 13:45
Order number	: -	Date Analysis Commenced	: 09-May-2023
C-O-C number	: 51782	Issue Date	: 19-May-2023 11:35
Sampler	: [redacted]		
Site	: VIC_0445_PFASOMP_Public_Land		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 27		
No. of samples analysed	: 27		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X: Poor matrix spike recovery for sample EM2308009-002 due to sample matrix interference.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (19/5/23): This report has been amended as a result of a request to change sample identification numbers (IDs) received from M.B on 18/5/23, for sample SD412 #29. All analysis results are as per the previous report.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW360_230504	0445_MW361_230504	0445_MW357_230504	0445_MW356_230505	----
			Sampling date / time	04-May-2023 17:51	04-May-2023 18:01	04-May-2023 18:06	05-May-2023 21:21	----
Compound	CAS Number	LOR	Unit	EM2308009-009	EM2308009-015	EM2308009-019	EM2308009-021	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.06**	**0.04**	**0.04**	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.08**	**0.10**	**0.04**	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW360_230504	0445_MW361_230504	0445_MW357_230504	0445_MW356_230505	----
				Sampling date / time	04-May-2023 17:51	04-May-2023 18:01	04-May-2023 18:06	05-May-2023 21:21	----
Compound	CAS Number	LOR	Unit		EM2308009-009	EM2308009-015	EM2308009-019	EM2308009-021	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.14**	**0.14**	**0.08**	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.14**	**0.14**	**0.08**	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.14**	**0.14**	**0.08**	<0.01	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.5**	**96.2**	**90.1**	**81.5**	----
13C8-PFOA	----	0.02	%		**99.2**	**95.6**	**94.8**	**93.8**	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0445_SD424_230502	0445_SD463_230502	0445_SD395_230506	0445_SD412_230505	----
			Sampling date / time	02-May-2023 17:24	02-May-2023 17:25	06-May-2023 13:44	05-May-2023 10:43	----
Compound	CAS Number	LOR	Unit	EM2308009-001	EM2308009-002	EM2308009-024	EM2308009-029	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**22.7**	**36.1**	**32.0**	**49.4**	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0002**	**0.0003**	<0.0002	<0.0002	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0033**	**0.0048**	**0.0020**	**0.0020**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	**0.0002**	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0445_SD424_230502	0445_SD463_230502	0445_SD395_230506	0445_SD412_230505	----
				Sampling date / time	02-May-2023 17:24	02-May-2023 17:25	06-May-2023 13:44	05-May-2023 10:43	----
Compound	CAS Number	LOR	Unit		EM2308009-001	EM2308009-002	EM2308009-024	EM2308009-029	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0035**	**0.0051**	**0.0022**	**0.0020**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0035**	**0.0051**	**0.0020**	**0.0020**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0035**	**0.0051**	**0.0020**	**0.0020**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**103**	**106**	**109**	**127**	----
13C8-PFOA	----	0.0002	%		**89.8**	**94.0**	**96.0**	**93.4**	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW424_230502	0445_SW463_230502	0445_SW434_230502	0445_SW431_230502	0445_SW430_230504
				Sampling date / time	02-May-2023 17:26	02-May-2023 17:28	02-May-2023 17:34	02-May-2023 17:35	04-May-2023 17:41
Compound	CAS Number	LOR	Unit		EM2308009-003	EM2308009-004	EM2308009-005	EM2308009-006	EM2308009-007
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.46**	**0.07**	<0.01	<0.01	**0.06**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.84**	**0.30**	**0.03**	**0.03**	**0.13**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.06**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW424_230502	0445_SW463_230502	0445_SW434_230502	0445_SW431_230502	0445_SW430_230504
				Sampling date / time	02-May-2023 17:26	02-May-2023 17:28	02-May-2023 17:34	02-May-2023 17:35	04-May-2023 17:41
Compound	CAS Number	LOR	Unit		EM2308009-003	EM2308009-004	EM2308009-005	EM2308009-006	EM2308009-007
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.46**	**0.37**	**0.03**	**0.03**	**0.19**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.30**	**0.37**	**0.03**	**0.03**	**0.19**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.43**	**0.37**	**0.03**	**0.03**	**0.19**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**94.3**	**97.5**	**97.9**	**99.8**
13C8-PFOA	----	0.02	%		**98.0**	**94.7**	**95.1**	**95.7**	**96.9**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW404_230504	0445_SW409_230504	0445_SW390_230504	0445_SW427_230504	0445_SW462_230504
			Sampling date / time	04-May-2023 17:46	04-May-2023 17:53	04-May-2023 17:55	04-May-2023 17:57	04-May-2023 17:58
Compound	CAS Number	LOR	Unit	EM2308009-008	EM2308009-010	EM2308009-011	EM2308009-012	EM2308009-013
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	**0.14**	**0.01**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	**0.04**	<0.01	**0.37**	**0.04**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	**0.02**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	**0.01**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW404_230504	0445_SW409_230504	0445_SW390_230504	0445_SW427_230504	0445_SW462_230504
				Sampling date / time	04-May-2023 17:46	04-May-2023 17:53	04-May-2023 17:55	04-May-2023 17:57	04-May-2023 17:58
Compound	CAS Number	LOR	Unit		EM2308009-008	EM2308009-010	EM2308009-011	EM2308009-012	EM2308009-013
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.04**	<0.01	**0.54**	**0.05**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.04**	<0.01	**0.51**	**0.05**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.04**	<0.01	**0.54**	**0.05**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**99.9**	**93.9**	**94.5**	**98.0**
13C8-PFOA	----	0.02	%		**97.6**	**95.7**	**96.4**	**95.6**	**94.0**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW432_230504	0445_SW393_230504	0445_SW416_230504	0445_SW412_230505	0445_SW403_230505
			Sampling date / time	04-May-2023 17:59	04-May-2023 18:02	04-May-2023 18:05	05-May-2023 21:33	05-May-2023 21:34
Compound	CAS Number	LOR	Unit	EM2308009-014	EM2308009-016	EM2308009-018	EM2308009-022	EM2308009-023
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.02**	<0.01	<0.01	<0.01	**0.13**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.04**	<0.01	<0.01	**0.02**	**0.12**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW432_230504	0445_SW393_230504	0445_SW416_230504	0445_SW412_230505	0445_SW403_230505
				Sampling date / time	04-May-2023 17:59	04-May-2023 18:02	04-May-2023 18:05	05-May-2023 21:33	05-May-2023 21:34
Compound	CAS Number	LOR	Unit		EM2308009-014	EM2308009-016	EM2308009-018	EM2308009-022	EM2308009-023
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.06**	<0.01	<0.01	**0.02**	**0.27**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.06**	<0.01	<0.01	**0.02**	**0.25**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	<0.01	<0.01	**0.02**	**0.27**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**95.6**	**88.1**	**89.7**	**98.4**
13C8-PFOA	----	0.02	%		**96.6**	**94.2**	**98.6**	**94.2**	**96.7**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW470_230506	0445_SW405_230506	0445_SW398_230506	0445_SW395_230506	----
			Sampling date / time	06-May-2023 13:45	06-May-2023 13:45	06-May-2023 13:49	06-May-2023 13:48	----
Compound	CAS Number	LOR	Unit	EM2308009-025	EM2308009-026	EM2308009-028	EM2308009-030	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.10**	**0.06**	<0.01	**0.03**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.11**	**0.05**	<0.01	**0.03**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW470_230506	0445_SW405_230506	0445_SW398_230506	0445_SW395_230506	----
				Sampling date / time	06-May-2023 13:45	06-May-2023 13:45	06-May-2023 13:49	06-May-2023 13:48	----
Compound	CAS Number	LOR	Unit		EM2308009-025	EM2308009-026	EM2308009-028	EM2308009-030	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.21**	**0.11**	<0.01	**0.06**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.21**	**0.11**	<0.01	**0.06**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.21**	**0.11**	<0.01	**0.06**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.2**	**98.9**	**97.5**	**101**	----
13C8-PFOA	----	0.02	%		**95.3**	**96.1**	**95.8**	**96.3**	----

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EM2308009**	gu: a	o. f4. L
Amendment	: **1**		
i eeaEC	o**STANTEC AUSTRALIA PTY LTD**	but f yuCyl	o v Emmyf ED aEQues mmPfi E Maef cyEa
i f EQuBC	o[redacted]	i f EQuBC	[redacted]
dVVyaPP	obv2vb 8. 8F r Rv SHWdOv R gbdi v SUNOHBdKI 2,i 3dNSORdb,d 1TTL	dVVyaPP	o6 WaPQueeRV SpymE: mueea 2,i dcPQueeu 1. 7.
Oaeephf Ea	o----	Oaeephf Ea	o+L. 1F569 9LT9
gyfjaBC	o2,i _T665_gr dSUMg_81	suGa SuDpeaP RaBamaV	oTF-Mul -8T81
UyVayEcDtay	o-	suGa dEuePhPi f DDaEBaV	oT9-Mul -8T81
i -U-i EcDtay	o5. 7F8	,PPca suGa	o. 9-Mul -8T81
SuDpeay	o[redacted]		
SnGa	o2,i _T665_gr dSUMg_gct eeB_buEV		
QcfGa EcDtay	oSY/. 19/. 9_BuEVhuEu		
Kf 0f 4PuDpeaPyaBamaV	o87		
Kf 0f 4PuDpeaPuEuePaV	o87		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

OhnP yapfyC PcpayPaVaP uEl pyamfcP yapfyQP) wnGa OhnP ya4ayaEBa0 RaPceeP uppee Cf Oha PuDpeea(P) uP Pct DnGaV3 cEeaPP Oha PuDpeeE: wuP BfEVcBaV tl dbS0 OhnP VfBcDaEC Phuee Ef Ct a yapfyVcBaV3axBapOfE4ceeO

OhnP QcueeC i f EQyfeRapfyCBf EQunEP Oha 4feef wnE: nE4fyDuGfEo

- but f yuCyl s cpeaBuGa (s Ng) RapfyC; RaeuOma gayBaEQu: a s n4ayaEBa (Rgs) uEV dBBapQuEBa bnDnP
- MaGfV BeuEA (MB) uEV but f yuCyl i f EQyfeSpnAa (bi S) RapfyC; RaBf nayl uEV dBBapQuEBa bnDnP
- MuQyx SpnAa (MS) RapfyC; RaBf nayl uEV dBBapQuEBa bnDnP

Signatories

OhnP VfBcDaEChuPt aaEaeaBQyfEnBuee Pn EaVtl Oha ucGfyzaV Pn EuCyaPt aef w0veaBQyfEnB Pn EnE: nPBuyyaV fcOnE BfDpeuEBa wnGa pyfBaVcyaPPpaB4aaVnE 8. i r R guyC. . 0

Signatories	*Position*	*Accreditation Category*
[redacted]	[redacted]	[redacted]
[redacted]	8,i Uy. uEnBi haDnPC	Maef cyEa Uy. uEnBP3SpymE: mueea32,i

gu: a o 8 f 4. L
WfyA UyVay o vM81TFTT9 dDaEVDaEC.
i eaEC o SOdKOvi dNSORdb,d gOY bOs
gyfjaBC o 2,i _T665_grdSUMg_81

General Comments

Cha uEuetOBue pyfBaVcyaP cPaV tI dbS huma taaE VamaefpaV 4yfD aPQtaePhaV nEQayEuQfEuetyaEf:EnPaV pyfBaVcyaP PcBh uP CtfPa pctaePhaV tI Cha NSvgd3 dgHd3 dS uEV KvgM0 ,E hfcPa VamaefpaV pyfBaVcyaP uya 4cetmueVuQaVuEVuya f4QaEuOCha BeaEOyaqcaPC0

Whaya DfnPQcya VaQayDnEuQfEhuPtaaEpay4fyDaV3yaPceEPuya yapfyQaVfEuVyl wanhCtuPhP0

Whaya u yapfyQaV eaPP CtuE (<) yaPceC nP hn hay CtuE Cha bUR3 CtnP Dul ta Vca C pynDuyl PuDpea axQuBCVnaPQtQa VmeCfE uEV/fy nEPc44BmaEC PuDpea 4fy uEuetPhP0 Whaya Cha bUR f4 u yapfyQaV yaPceC Vm4ayP 4yfD PQtEVuyVbUR3CtnP Dul ta Vca C hn hDfnPQcya BfEQaE3nEPc44BmaECPuDpea (yaVcBaVwanhCaDpefIaV) fyDuQxnEQayeayaEBa0

Ial o dEfEl Df cP= Ra4ayP C PuDpeaPwhnBh uya EfCPpaBm4Buet puyCf4CtnPwfyAfyWayt cC4fyDaVpuyCf4Cha Qi pyfBaPPefC
i dS KcDtay=i dSya: nPQl EcDtay4fD VuQttuPa DunEQnEaVtI i haDnBuedtPQuBCPSaymBaP0Cha i haDnBuedtPQuBCPSaymBa nPu VmmPhfiEf4Cha dDaytBuEi haDnBueSfBmaC0
bUR = bnDnCf4yapfyQE:
Rgs = RaeuCma gayBaEQu: a s m4ayaEBa
= ,EVnBuQaP4umeVQi

Laboratory Duplicate (DUP) Report

Cha qcuetC BfEQfe QayD butfyuCtyl scpeBuQa ya4ayP C u yuEVfDe PaeaBQaV nEQueutfyuCtyl PpeKC butfyuCtyl VcpeBuQaP pyfmVa nE4fyDuQfiE ya:uyVnE: DaCtfV pyaBnPhfiE uEV PuDpea haQayf:aEanC0 Cha payDnQaV yuE:aP 4fy Cha RaeuCma gayBaEC samuQfiE (Rgs) f4 butfyuCtyl scpeBuQaP uya PpaBm4aV nE dbS MaCtfV QW,-vK/1FuEV uya VapaEVaEC fE Cha Du:EnCVa f4 yaPceEP nE BfDpuynPfE C Cha emae f4 yapfyQE:o RaPceC< .TQDaP bURc Kf bnDnC,RaPceCtaQvaaE.TuEV 8TQDaP bURoT% - 5T%;RaPceC> 8TQDaP bURoT% - 8T%0

Sct-MuQx: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5038018)									
vM81T76. L-TT.	dEfEl Df cP	vdT55oMfnPQcya i fEQaEC	----	T0	%	6906	690L	T05	T% - 8T%
vM81T76. L-T81	dEfEl Df cP	vdT55oMfnPQcya i fEQaEC	----	T0	%	8F0	8F08	T0T	T% - 8T%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5038779)									
vM81TFTT9-TT.	T665_Ss 686_81T5T8	vg81. Xogay4cfyftcQuEa PceEnBuBnV (gr BS)	175-71-5	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfpaEQuEa PceEnBuBnV (gr gaS)	87TL-9. -6	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfhaxuEa PceEnBuBnV (gr HxS)	155-6L-6	T0TTT8	D:/A:	T0TTT8	T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfhapQuEa PceEnBuBnV (gr HpS)	175-98-F	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyffBQuEa PceEnBuBnV (gr US)	.7L1-81-.	T0TTT8	D:/A:	T0TT11	T0TT17	.T0F	T% - 5T%
		vg81. Xogay4cfyfVaBuEa PceEnBuBnV (gr s S)	115-77-1	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
vM81TFT.5-TF6	dEfEl Df cP	vg81. Xogay4cfyftcQuEa PceEnBuBnV (gr BS)	175-71-5	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfpaEQuEa PceEnBuBnV (gr gaS)	87TL-9. -6	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfhaxuEa PceEnBuBnV (gr HxS)	155-6L-6	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfhapQuEa PceEnBuBnV (gr HpS)	175-98-F	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyffBQuEa PceEnBuBnV (gr US)	.7L1-81-.	T0TTT8	D:/A:	T0TT..	T0TT.8	T0T	Kf bnDnC
		vg81. Xogay4cfyfVaBuEa PceEnBuBnV (gr s S)	115-77-1	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5038779)									
vM81TFTT9-TT.	T665_Ss 686_81T5T8	vg81. Xogay4cfyfpaEQuEfnBuBnV (gr gad)	87TL-9T-1	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfhaxuEfnBuBnV (gr Hxd)	1T7-86-6	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfhapQuEfnBuBnV (gr Hpd)	175-F5-9	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyffBQuEfnBuBnV (gr Ud)	115-L7-.	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfEfEuEfnBuBnV (gr Kd)	175-95-.	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfVaBuEfnBuBnV (gr s d)	115-7L-8	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfycEVaBuEfnBuBnV (gr NEs d)	8T5F-96-F	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC
		vg81. Xogay4cfyfVfVaBuEfnBuBnV (gr s f s d)	1T7-55-.	T0TTT8	D:/A:	<T0TTT8	<T0TTT8	T0T	Kf bnDnC

g u: a o 1 f 4. L
Wf yA UyVay o v M81TFTT9 dD aEVD aEC.
i eaEC o SOdKOv i dNSORdb,d gOY bOs
g yf jaBC o 2,i _T665_gr dSUMg_81

Sct -MuQx: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5038779) - continued									
v M81TFTT9-TT.	T665_Ss 686_81T5T8	v g81. Xogay4cf yf QnVaBuEf nBuBnV (gr Oys d)	78L89-96-F	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf GaQuVaBuEf nBuBnV (gr Oas d)	17L-TL-7	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
		v g81. Xogay4cf yf t cQuEf nBuBnV (gr Bd)	175-88-6	T0IT.	D: /A:	<T0IT.	<T0IT.	T0I	Kf bnDnC
v M81TFT. 5-TF6	dEf El Df cP	v g81. Xogay4cf yf paEQuEf nBuBnV (gr gad)	87TL-9T-1	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf haxuEf nBuBnV (gr Hxd)	1T7-86-6	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf hapQuEf nBuBnV (gr Hpd)	175-F5-9	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf f BQuEf nBuBnV (gr Ud)	115-L7-.	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf Ef EuEf nBuBnV (gr Kd)	175-95-.	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf VaBuEf nBuBnV (gr s d)	115-7L-8	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf cEVaBuEf nBuBnV (gr NEs d)	8T5F-96-F	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf Vf VaBuEf nBuBnV (gr s f s d)	1T7-55-.	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf QnVaBuEf nBuBnV (gr Oys d)	78L89-96-F	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. Xogay4cf yf GaQuVaBuEf nBuBnV (gr Oas d)	17L-TL-7	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
		v g81. Xogay4cf yf t cQuEf nBuBnV (gr Bd)	175-88-6	T0IT.	D: /A:	<T0IT.	<T0IT.	T0I	Kf bnDnC
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5038779)									
v M81TFTT9-TT.	T665_Ss 686_81T5T8	v g81. Xogay4cf yf f BQuEa PceF EuDnVa (r USd)	756-9. -L	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa PceF EuDnVf uBaQBuBnV (Mar USdd)	8155-1. -9	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. XoK-vQl epay4cf yf f BQuEa PceF EuDnVf uBaQBuBnV (vC USdd)	899. -5T-L	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa PceF EuDnVa (Mar USd)	1. 5TL-18-F	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
		v g81. XoK-vQl epay4cf yf f BQuEa PceF EuDnVa (vC USd)	6. 5. -5T-8	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa PceF EuDnVf aQuEf e(Mar USv)	8666F-T9-7	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
		v g81. XoK-vQl epay4cf yf f BQuEa PceF EuDnVf aQuEf e(vC USv)	. L9. -99-8	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
v M81TFT. 5-TF6	dEf El Df cP	v g81. Xogay4cf yf f BQuEa PceF EuDnVa (r USd)	756-9. -L	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa PceF EuDnVf uBaQBuBnV (Mar USdd)	8155-1. -9	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. XoK-vQl epay4cf yf f BQuEa PceF EuDnVf uBaQBuBnV (vC USdd)	899. -5T-L	T0ITT8	D: /A:	<T0ITT8	<T0ITT8	T0I	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa PceF EuDnVa (Mar USd)	1. 5TL-18-F	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
		v g81. XoK-vQl epay4cf yf f BQuEa PceF EuDnVa (vC USd)	6. 5. -5T-8	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa PceF EuDnVf aQuEf e(Mar USv)	8666F-T9-7	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC
		v g81. XoK-vQl epay4cf yf f BQuEa PceF EuDnVf aQuEf e(vC USv)	. L9. -99-8	T0ITT5	D: /A:	<T0ITT5	<T0ITT5	T0I	Kf bnDnC

gu: a o 6 f 4. L
WfyA UyWay o vM81TFTT9 dDaEVDaEC.
i eaEC o SOdKOvi dNSORdb,d gOY bOs
gyfjaBC o 2,i _T665_gr dSUMg_81

Sct -MuQyx: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5038779)									
vM81TFTT9-TT.	T665_Ss686_81T5T8	vg81. Xo6c8 r ecf yf Qaef DayPceff EnBuBnV (6c8 r OS)	757. 86-78-6	T0TTT5	D: /A:	<T0TTT5	<T0TTT5	T0T	Kf bnDnC
		vg81. XoLc8 r ecf yf Qaef DayPceff EnBuBnV (Lc8 r OS)	87L. 9-97-8	T0TTT5	D: /A:	<T0TTT5	<T0TTT5	T0T	Kf bnDnC
		vg81. XoFc8 r ecf yf Qaef DayPceff EnBuBnV (Fc8 r OS)	19. TF-16-6	T0TTT5	D: /A:	<T0TTT5	<T0TTT5	T0T	Kf bnDnC
		vg81. Xo. Tc8 r ecf yf Qaef DayPceff EnBuBnV (. Tc8 r OS)	. 8T88L-LT-T	T0TTT5	D: /A:	<T0TTT5	<T0TTT5	T0T	Kf bnDnC
vM81TFT. 5-TF6	dEf El Df cP	vg81. Xo6c8 r ecf yf Qaef DayPceff EnBuBnV (6c8 r OS)	757. 86-78-6	T0TTT5	D: /A:	<T0TTT5	<T0TTT5	T0T	Kf bnDnC
		vg81. XoLc8 r ecf yf Qaef DayPceff EnBuBnV (Lc8 r OS)	87L. 9-97-8	T0TTT5	D: /A:	<T0TTT5	<T0TTT5	T0T	Kf bnDnC
		vg81. XoFc8 r ecf yf Qaef DayPceff EnBuBnV (Fc8 r OS)	19. TF-16-6	T0TTT5	D: /A:	<T0TTT5	<T0TTT5	T0T	Kf bnDnC
		vg81. Xo. Tc8 r ecf yf Qaef DayPceff EnBuBnV (. Tc8 r OS)	. 8T88L-LT-T	T0TTT5	D: /A:	<T0TTT5	<T0TTT5	T0T	Kf bnDnC
EP231P: PFAS Sums (QC Lot: 5038779)									
vM81TFTT9-TT.	T665_Ss686_81T5T8	vg81. XoScD f4gr dS	----	T0TTT8	D: /A:	T0TT15	T0TT19	. T0F	T% - 5T%
		vg81. XoScD f4gr HxS uEV gr US	155-6L-6/. 7L1-81-.	T0TTT8	D: /A:	T0TT15	T0TT19	. T0F	T% - 5T%
		vg81. XoScD f4gr dS (Wd s vR bnPC)	----	T0TTT8	D: /A:	T0TT15	T0TT19	. T0F	T% - 5T%
vM81TFT. 5-TF6	dEf El Df cP	vg81. XoScD f4gr dS	----	T0TTT8	D: /A:	T0TT. .	T0TT. 8	F0Y	Kf bnDnC
		vg81. XoScD f4gr HxS uEV gr US	155-6L-6/. 7L1-81-.	T0TTT8	D: /A:	T0TT. .	T0TT. 8	F0Y	Kf bnDnC
		vg81. XoScD f4gr dS (Wd s vR bnPC)	----	T0TTT8	D: /A:	T0TT. .	T0TT. 8	F0Y	Kf bnDnC

Sct -MuQyx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5038333)									
vM81TFTT9-T8.	T665_MW15L_81T5T5	vg81. Xogay4cf yf haxuEa Pceff EnBuBnV (gr HxS)	155-6L-6	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogay4cf yf f BQuEa Pceff EnBuBnV (gr US)	. 7L1-81-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogay4cf yf t cQuEa Pceff EnBuBnV (gr BS)	175-71-5	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogay4cf yf paEQuEa Pceff EnBuBnV (gr gaS)	87TL-9. -6	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogay4cf yf hapQuEa Pceff EnBuBnV (gr HpS)	175-98-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogay4cf yf VaBuEa Pceff EnBuBnV (gr s S)	115-77-1	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5039965)									
vM81TFTT9-TTF	T665_SW6T6_81T5T6	vg81. Xogay4cf yf haxuEa Pceff EnBuBnV (gr HxS)	155-6L-6	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogay4cf yf f BQuEa Pceff EnBuBnV (gr US)	. 7L1-81-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogay4cf yf t cQuEa Pceff EnBuBnV (gr BS)	175-71-5	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogay4cf yf paEQuEa Pceff EnBuBnV (gr gaS)	87TL-9. -6	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogay4cf yf hapQuEa Pceff EnBuBnV (gr HpS)	175-98-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC

gu: a o 5 f 4. L
WfyA UyVay o vM81TFTT9 dDaEVDaEC.
i aaEC o SOdKOvi dNSORdb,d gOY bOs
gyfjaBC o 2,i _T665_grdSUMg_81



Sct -MuQyx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5039965) - continued									
vM81TFTT9-TTF	T665_SW6T6_81T5T6	vg81. Xogayfcf yf VaBuEa PcefEnBuBnV (gr s S)	115-77-1	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
vM81TFTT9-T. L	T665_SW191_81T5T6	vg81. Xogayfcf yf haxuEa PcefEnBuBnV (gr HxS)	155-6L-6	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogayfcf yf fBQuEa PcefEnBuBnV (gr US)	. 7L1-81-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogayfcf yf tcQuEa PcefEnBuBnV (gr BS)	175-71-5	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf paEQuEa PcefEnBuBnV (gr gaS)	87TL-9. -6	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf hapQuEa PcefEnBuBnV (gr HpS)	175-98-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf VaBuEa PcefEnBuBnV (gr s S)	115-77-1	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5038333)									
vM81TFTT9-T8.	T665_MW15L_81T5T5	vg81. Xogayfcf yf fBQuEfnBuBnV (gr Ud)	115-L7-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogayfcf yf paEQuEfnBuBnV (gr gad)	87TL-9T-1	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf haxuEfnBuBnV (gr Hxd)	1T7-86-6	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf hapQuEfnBuBnV (gr Hpd)	175-F5-9	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf EfEuEfnBuBnV (gr Kd)	175-95-.	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf VaBuEfnBuBnV (gr s d)	115-7L-8	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf cEVaBuEfnBuBnV (gr NEs d)	8T5F-96-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf VfVaBuEfnBuBnV (gr s f s d)	1T7-55-.	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf QnVaBuEfnBuBnV (gr Oys d)	78L89-96-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf GaQuVaBuEfnBuBnV (gr Oas d)	17L-TL-7	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. Xogayfcf yf tcQuEfnBuBnV (gr Bd)	175-88-6	T0	µ: /b	<T0	<T0	T0T	Kf bnDnC
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5039965)									
vM81TFTT9-TTF	T665_SW6T6_81T5T6	vg81. Xogayfcf yf fBQuEfnBuBnV (gr Ud)	115-L7-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogayfcf yf paEQuEfnBuBnV (gr gad)	87TL-9T-1	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf haxuEfnBuBnV (gr Hxd)	1T7-86-6	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf hapQuEfnBuBnV (gr Hpd)	175-F5-9	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf EfEuEfnBuBnV (gr Kd)	175-95-.	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf VaBuEfnBuBnV (gr s d)	115-7L-8	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf cEVaBuEfnBuBnV (gr NEs d)	8T5F-96-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf VfVaBuEfnBuBnV (gr s f s d)	1T7-55-.	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf QnVaBuEfnBuBnV (gr Oys d)	78L89-96-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf GaQuVaBuEfnBuBnV (gr Oas d)	17L-TL-7	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. Xogayfcf yf tcQuEfnBuBnV (gr Bd)	175-88-6	T0	µ: /b	<T0	<T0	T0T	Kf bnDnC
vM81TFTT9-T. L	T665_SW191_81T5T6	vg81. Xogayfcf yf fBQuEfnBuBnV (gr Ud)	115-L7-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. Xogayfcf yf paEQuEfnBuBnV (gr gad)	87TL-9T-1	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf haxuEfnBuBnV (gr Hxd)	1T7-86-6	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf hapQuEfnBuBnV (gr Hpd)	175-F5-9	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf EfEuEfnBuBnV (gr Kd)	175-95-.	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf VaBuEfnBuBnV (gr s d)	115-7L-8	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf cEVaBuEfnBuBnV (gr NEs d)	8T5F-96-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf VfVaBuEfnBuBnV (gr s f s d)	1T7-55-.	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		vg81. Xogayfcf yf QnVaBuEfnBuBnV (gr Oys d)	78L89-96-F	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC

gu: a o L f 4. L
Wf yA UyVay o v M81TFTT9 dDaEVDaEC.
i aaEC o SOdKOvi dNSORdb,d gOY bOs
gyf jaBC o 2,i _T665_gr dSUMg_81

Sct -MuQyx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5039965) - continued									
v M81TFTT9-T. L	T665_SW191_81T5T6	v g81. Xogay4cf yf G2QuVaBuEf nBuBnV (gr Oas d)	17L-TL-7	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. Xogay4cf yf t cQuEf nBuBnV (gr Bd)	175-88-6	T0	µ: /b	<T0	<T0	T0T	Kf bnDnC
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5038333)									
v M81TFTT9-T8.	T665_MW15L_81T5T5	v g81. Xogay4cf yf f BQuEa Pcef EuDnVa (r USd)	756-9. -L	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVf uBaQBuBnV (Mar USdd)	8155-1. -9	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-v Ql epay4cf yf f BQuEa Pcef EuDnVf uBaQBuBnV (v C USdd)	899. -5T-L	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVa (Mar USd)	1. 5TL-18-F	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. XoK-v Ql epay4cf yf f BQuEa Pcef EuDnVa (v C USd)	6. 5. -5T-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVf aQuEf e(Mar USv)	8666F-T9-7	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. XoK-v Ql epay4cf yf f BQuEa Pcef EuDnVf aQuEf e(v C USv)	. L9. -99-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5039965)									
v M81TFTT9-TTF	T665_SW6T6_81T5T6	v g81. Xogay4cf yf f BQuEa Pcef EuDnVa (r USd)	756-9. -L	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVf uBaQBuBnV (Mar USdd)	8155-1. -9	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-v Ql epay4cf yf f BQuEa Pcef EuDnVf uBaQBuBnV (v C USdd)	899. -5T-L	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVa (Mar USd)	1. 5TL-18-F	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. XoK-v Ql epay4cf yf f BQuEa Pcef EuDnVa (v C USd)	6. 5. -5T-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVf aQuEf e(Mar USv)	8666F-T9-7	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. XoK-v Ql epay4cf yf f BQuEa Pcef EuDnVf aQuEf e(v C USv)	. L9. -99-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
v M81TFTT9-T. L	T665_SW191_81T5T6	v g81. Xogay4cf yf f BQuEa Pcef EuDnVa (r USd)	756-9. -L	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVf uBaQBuBnV (Mar USdd)	8155-1. -9	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-v Ql epay4cf yf f BQuEa Pcef EuDnVf uBaQBuBnV (v C USdd)	899. -5T-L	T0T8	µ: /b	<T0T8	<T0T8	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVa (Mar USd)	1. 5TL-18-F	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. XoK-v Ql epay4cf yf f BQuEa Pcef EuDnVa (v C USd)	6. 5. -5T-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		v g81. XoK-MaQl epay4cf yf f BQuEa Pcef EuDnVf aQuEf e(Mar USv)	8666F-T9-7	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC

Sct -MuQyx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5039965) - continued									
vM81TFTT9-T. L	T665_SW191_81T5T6	vg81. XoK-vQl epay4ecfyf BQuEa PcefEuDnVfaQuEfe(vCUSv)	. L9. -99-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5038333)									
vM81TFTT9-T8.	T665_MW15L_81T5T5	vg81. Xo6o8 recfyfQaeDayPcefEnBuBnV (6o8 rOS)	757. 86-78-6	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. XoLo8 recfyfQaeDayPcefEnBuBnV (Lo8 rOS)	87L. 9-97-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. XoFo8 recfyfQaeDayPcefEnBuBnV (Fo8 rOS)	19. TF-16-6	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. Xo. To8 recfyfQaeDayPcefEnBuBnV (. To8 rOS)	. 8T88L-LT-T	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5039965)									
vM81TFTT9-TTF	T665_SW6T6_81T5T6	vg81. Xo6o8 recfyfQaeDayPcefEnBuBnV (6o8 rOS)	757. 86-78-6	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. XoLo8 recfyfQaeDayPcefEnBuBnV (Lo8 rOS)	87L. 9-97-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. XoFo8 recfyfQaeDayPcefEnBuBnV (Fo8 rOS)	19. TF-16-6	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. Xo. To8 recfyfQaeDayPcefEnBuBnV (. To8 rOS)	. 8T88L-LT-T	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
vM81TFTT9-T. L	T665_SW191_81T5T6	vg81. Xo6o8 recfyfQaeDayPcefEnBuBnV (6o8 rOS)	757. 86-78-6	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. XoLo8 recfyfQaeDayPcefEnBuBnV (Lo8 rOS)	87L. 9-97-8	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. XoFo8 recfyfQaeDayPcefEnBuBnV (Fo8 rOS)	19. TF-16-6	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
		vg81. Xo. To8 recfyfQaeDayPcefEnBuBnV (. To8 rOS)	. 8T88L-LT-T	T0T5	µ: /b	<T0T5	<T0T5	T0T	Kf bnDnC
EP231P: PFAS Sums (QC Lot: 5038333)									
vM81TFTT9-T8.	T665_MW15L_81T5T5	vg81. XoScD f4grdS	----	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. XoScD f4grHxSuEVgrUS	155-6L-6/. 7L1-81-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. XoScD f4grdS (WdsvRbnPC)	----	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
EP231P: PFAS Sums (QC Lot: 5039965)									
vM81TFTT9-TTF	T665_SW6T6_81T5T6	vg81. XoScD f4grdS	----	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. XoScD f4grHxSuEVgrUS	155-6L-6/. 7L1-81-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		vg81. XoScD f4grdS (WdsvRbnPC)	----	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
vM81TFTT9-T. L	T665_SW191_81T5T6	vg81. XoScD f4grdS	----	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC

Sct -MuQyx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231P: PFAS Sums (QC Lot: 5039965) - continued									
v M81TFTT9-T. L	T665_SW191_81T5T6	v g81. XoScD f 4gr HxS uEV gr US	155-6L-6/. 7L1-81-.	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC
		v g81. XoScD f 4gr dS (Wd s v R bnPQ	----	T0T.	µ: /b	<T0T.	<T0T.	T0T	Kf bnDnC

gu: a	o 9 f 4. L
WfyA UyVay	o vM81TFTT9 dDaEVDaEC.
i eaEC	o SOdKOvi dNSORdb,d gOY bOs
gyfjaBC	o 2,i _T665_gr dSUMg_81

Method Blank (MB) and Laboratory Control Sample (LCS) Report

Cha qcueC BfEQfe GayD MaCfV / butfyuCyl BeuEA ya4ayP C uE uEueGa 4yaa DuQyx C whnBh ueeyau: aECP uya uVVaV nE Cha PuDa mfecDaP f y pyfpfyCfEP uP cPaV nE PQuEVuyV PuDpea pyapuyuCfE0 Cha pcypf Pa f 4 CnP Qi puyuDaGay nP C DfEnCy pfGaEQue eutfyuCyl BfEQDnEuCfE0 Cha qcueC BfEQfe GayD butfyuCyl i fEQfe SuDpea (bi S) ya4ayP C u BayCfaV ya4ayaEBa DuGaynue8 f y u AEfwE nEGay4ayaEBa 4yaa DuQyx PpnAaV wnC Quy.aC uEueGaP0Cha pcypf Pa f 4 CnP Qi puyuDaGaynP C DfEnCyDaCfV pyaBnPfiEuEVuBBcyuBl nEVapaEVaECf4PuDpea DuQyx0s l EuDnBRaBfmayl bnDnPuya tuPaV f EPQuGPGBueamuecuCfE f 4pyfBaPPaV bi S0

Sct -MuQyx: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5038779)								
vg81. Xogay4ecfyf tcQuEa PcefEnBuBnV (gr BS)	175-71-5	T0TTT8	D: /A:	<T0TTT8	T0TT. . . D: /A:	9506	780T	. 8F
vg81. Xogay4ecfyf paEQuEa PcefEnBuBnV (gr gaS)	87TL-9. -6	T0TTT8	D: /A:	<T0TTT8	T0TT. . F D: /A:	950T	710T	. 81
vg81. Xogay4ecfyf haxuEa PcefEnBuBnV (gr HxS)	155-6L-6	T0TTT8	D: /A:	<T0TTT8	T0TT. . 6 D: /A:	9. 07	L70T	. 1T
vg81. Xogay4ecfyf hapQuEa PcefEnBuBnV (gr HpS)	175-98-F	T0TTT8	D: /A:	<T0TTT8	T0TT. . 9 D: /A:	970F	7T0T	. 18
vg81. Xogay4ecfyf fBQuEa PcefEnBuBnV (gr US)	. 7L1-81-.	T0TTT8	D: /A:	<T0TTT8	T0TT. . L D: /A:	9T0L	LF0T	. 1L
vg81. Xogay4ecfyf VaBuEa PcefEnBuBnV (gr s S)	115-77-1	T0TTT8	D: /A:	<T0TTT8	T0TT. 8. D: /A:	9. 09	590T	. 16
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5038779)								
vg81. Xogay4ecfyf tcQuEfnBuBnV (gr Bd)	175-88-6	T0TT.	D: /A:	<T0TT.	T0TTL85 D: /A:	F70L	7. 0T	. 15
vg81. Xogay4ecfyf paEQuEfnBuBnV (gr gad)	87TL-9T-1	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	FL08	L90T	. 18
vg81. Xogay4ecfyf haxuEfnBuBnV (gr Hxd)	1T7-86-6	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	F806	7T0T	. 18
vg81. Xogay4ecfyf hapQuEfnBuBnV (gr Hpd)	175-F5-9	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	F50I	7. 0T	. 1.
vg81. Xogay4ecfyf fBQuEfnBuBnV (gr Ud)	115-L7-.	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	9508	L90T	. 11
vg81. Xogay4ecfyf EfEuEfnBuBnV (gr Kd)	175-95-.	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	9. 0T	780T	. 89
vg81. Xogay4ecfyf VaBuEfnBuBnV (gr s d)	115-7L-8	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	F606	L90T	. 11
vg81. Xogay4ecfyf cEVaBuEfnBuBnV (gr NEs d)	8T5F-96-F	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	F. 08	L60T	. 1L
vg81. Xogay4ecfyf Vf VaBuEfnBuBnV (gr s f s d)	1T7-55-.	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	F10L	L90T	. 15
vg81. Xogay4ecfyf QyVaBuEfnBuBnV (gr Oys d)	78L89-96-F	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	FT0T	LL0T	. 19
vg81. Xogay4ecfyf GaQuVaBuEfnBuBnV (gr Oas d)	17L-TL-7	T0TTT5	D: /A:	<T0TTT5	T0TT1. 8 D: /A:	F108	L90T	. 11
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5038779)								
vg81. Xogay4ecfyf fBQuEa PcefEuDnVa (r USd)	756-9. -L	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	F10	L70T	. 17
vg81. XoK-MaCnlepay4ecfyf fBQuEa PcefEuDnVa (Mar USd)	1. 5TL-18-F	T0TTT5	D: /A:	<T0TTT5	T0TT1. 8 D: /A:	9508	7T0T	. 1T
vg81. XoK-vCnlepay4ecfyf fBQuEa PcefEuDnVa (vC USd)	6. 5. -5T-8	T0TTT5	D: /A:	<T0TTT5	T0TT1. 8 D: /A:	F50I	7T0T	. 1T
vg81. XoK-MaCnlepay4ecfyf fBQuEa PcefEuDnVfaCuEfe (Mar USv)	8666F-T9-7	T0TTT5	D: /A:	<T0TTT5	T0TT1. 8 D: /A:	F50L	7T0T	. 1T
vg81. XoK-vCnlepay4ecfyf fBQuEa PcefEuDnVfaCuEfe (vC USv)	. L9. -99-8	T0TTT5	D: /A:	<T0TTT5	T0TT1. 8 D: /A:	960T	7T0T	. 1T
vg81. XoK-MaCnlepay4ecfyf fBQuEa PcefEuDnVfuBaGBuBnV (Mar USdd)	8155-1. -9	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	F80	L10T	. 66
vg81. XoK-vCnlepay4ecfyf fBQuEa PcefEuDnVfuBaGBuBnV (vC USdd)	899. -5T-L	T0TTT8	D: /A:	<T0TTT8	T0TT. 85 D: /A:	790L	L. 0T	. 19
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5038779)								

Sct -MuGyx: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5038779) - continued								
vg81. Xo6c8 r ecf yf Qaef DayPcef EnBuBaV (6c8 r OS)	757. 86-78-6	T0TTT5	D: /A:	<T0TTT5	T0TT. . 7 D: /A:	FF07	L80T	. 65
vg81. XoLc8 r ecf yf Qaef DayPcef EnBuBaV (Lc8 r OS)	87L. 9-97-8	T0TTT5	D: /A:	<T0TTT5	T0TT. . 9 D: /A:	9101	L60T	. 6T
vg81. XoFc8 r ecf yf Qaef DayPcef EnBuBaV (Fc8 r OS)	19. TF-16-6	T0TTT5	D: /A:	<T0TTT5	T0TT. 8 D: /A:	910T	L50T	. 17
vg81. Xo. Tc8 r ecf yf Qaef DayPcef EnBuBaV (. Tc8 r OS)	. 8T88L-LT-T	T0TTT5	D: /A:	<T0TTT5	T0TT. 8. D: /A:	F60T	7T0T	. 1T
EP231P: PFAS Sums (QCLot: 5038779)								
vg81. XoScD f 4gr dS	---	T0TTT8	D: /A:	<T0TTT8	----	----	----	----
vg81. XoScD f 4gr HxS uEV gr US	155-6L-6/. 7 L1-81-.	T0TTT8	D: /A:	<T0TTT8	----	----	----	----
vg81. XoScD f 4gr dS (Wd s v R bmPC)	---	T0TTT8	D: /A:	<T0TTT8	---	----	----	----

Sct -MuGyx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5038333)								
vg81. Xogay4cf yf t cQEa PcefEnBuBaV (gr BS)	175-71-5	T0T8	µ: /b	<T0T8	T0888 µ: /b	9. 0T	780T	. 1T
vg81. Xogay4cf yf paEQEa PcefEnBuBaV (gr gaS)	87TL-9. -6	T0T8	µ: /b	<T0T8	T0815 µ: /b	9T05	7. 0T	. 87
vg81. Xogay4cf yf haxuEa PcefEnBuBaV (gr HxS)	155-6L-6	T0T.	µ: /b	<T0T.	T088F µ: /b	F90L	LF0T	. 1.
vg81. Xogay4cf yf hapQEa PcefEnBuBaV (gr HpS)	175-98-F	T0T8	µ: /b	<T0T8	T081F µ: /b	9109	L90T	. 16
vg81. Xogay4cf yf fBQEa PcefEnBuBaV (gr US)	. 7L1-81-.	T0T.	µ: /b	<T0T.	T0818 µ: /b	9. 01	L50T	. 6T
vg81. Xogay4cf yf VaBuEa PcefEnBuBaV (gr s S)	115-77-1	T0T8	µ: /b	<T0T8	T086. µ: /b	F90T	510T	. 68
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5039965)								
vg81. Xogay4cf yf t cQEa PcefEnBuBaV (gr BS)	175-71-5	T0T8	µ: /b	<T0T8	T0888 µ: /b	9T06	780T	. 1T
vg81. Xogay4cf yf paEQEa PcefEnBuBaV (gr gaS)	87TL-9. -6	T0T8	µ: /b	<T0T8	T0815 µ: /b	950L	7. 0T	. 87
vg81. Xogay4cf yf haxuEa PcefEnBuBaV (gr HxS)	155-6L-6	T0T.	µ: /b	<T0T.	T088F µ: /b	9T0F	LF0T	. 1.
vg81. Xogay4cf yf hapQEa PcefEnBuBaV (gr HpS)	175-98-F	T0T8	µ: /b	<T0T8	T081F µ: /b	. T7	L90T	. 16
vg81. Xogay4cf yf fBQEa PcefEnBuBaV (gr US)	. 7L1-81-.	T0T.	µ: /b	<T0T.	T0818 µ: /b	9501	L50T	. 6T
vg81. Xogay4cf yf VaBuEa PcefEnBuBaV (gr s S)	115-77-1	T0T8	µ: /b	<T0T8	T086. µ: /b	950	510T	. 68
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5047236)								
vg81. Xogay4cf yf t cQEa PcefEnBuBaV (gr BS)	175-71-5	T0T8	µ: /b	<T0T8	T0888 µ: /b	9709	780T	. 1T
vg81. Xogay4cf yf paEQEa PcefEnBuBaV (gr gaS)	87TL-9. -6	T0T8	µ: /b	<T0T8	T0815 µ: /b	980F	7. 0T	. 87
vg81. Xogay4cf yf haxuEa PcefEnBuBaV (gr HxS)	155-6L-6	T0T.	µ: /b	<T0T.	T088F µ: /b	9907	LF0T	. 1.
vg81. Xogay4cf yf hapQEa PcefEnBuBaV (gr HpS)	175-98-F	T0T8	µ: /b	<T0T8	T081F µ: /b	. TT	L90T	. 16
vg81. Xogay4cf yf fBQEa PcefEnBuBaV (gr US)	. 7L1-81-.	T0T.	µ: /b	<T0T.	T0818 µ: /b	950T	L50T	. 6T
vg81. Xogay4cf yf VaBuEa PcefEnBuBaV (gr s S)	115-77-1	T0T8	µ: /b	<T0T8	T086. µ: /b	. T.	510T	. 68
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5038333)								

Sct -MuQyx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5038333) - continued								
vg81. Xogayxcf yf t cQEf nBuBnV (gr Bd)	175-88-6	T0	µ: /b	<T0	. 085 µ: /b	9L0T	710T	. 89
vg81. Xogayxcf yf paEQEf nBuBnV (gr gad)	87TL-9T-1	T0T8	µ: /b	<T0T8	T085 µ: /b	980L	780T	. 89
vg81. Xogayxcf yf haxuEf nBuBnV (gr Hxd)	1T7-86-6	T0T8	µ: /b	<T0T8	T085 µ: /b	9T0L	780T	. 89
vg81. Xogayxcf yf hapQEf nBuBnV (gr Hpd)	175-F5-9	T0T8	µ: /b	<T0T8	T085 µ: /b	F905	780T	. 1T
vg81. Xogayxcf yf fBQEf nBuBnV (gr Ud)	115-L7-.	T0T.	µ: /b	<T0T.	T085 µ: /b	F909	7. 0T	. 11
vg81. Xogayxcf yf Ef EuEf nBuBnV (gr Kd)	175-95-.	T0T8	µ: /b	<T0T8	T085 µ: /b	9L0L	L90T	. 1T
vg81. Xogayxcf yf VaBuEf nBuBnV (gr s d)	115-7L-8	T0T8	µ: /b	<T0T8	T085 µ: /b	FL0L	7. 0T	. 89
vg81. Xogayxcf yf cEVaBuEf nBuBnV (gr NEs d)	8T5F-96-F	T0T8	µ: /b	<T0T8	T085 µ: /b	9L09	L90T	. 11
vg81. Xogayxcf yf Vf VaBuEf nBuBnV (gr s f s d)	1T7-55-.	T0T8	µ: /b	<T0T8	T085 µ: /b	9F07	780T	. 16
vg81. Xogayxcf yf GyVaBuEf nBuBnV (gr Oys d)	78L89-96-F	T0T8	µ: /b	<T0T8	T085 µ: /b	980L	L50T	. 66
vg81. Xogayxcf yf GaGyuVaBuEf nBuBnV (gr Oas d)	17L-TL-7	T0T5	µ: /b	<T0T5	T0L85 µ: /b	960	7. 0T	. 18
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5039965)								
vg81. Xogayxcf yf t cQEf nBuBnV (gr Bd)	175-88-6	T0	µ: /b	<T0	. 085 µ: /b	. T6	710T	. 89
vg81. Xogayxcf yf paEQEf nBuBnV (gr gad)	87TL-9T-1	T0T8	µ: /b	<T0T8	T085 µ: /b	9109	780T	. 89
vg81. Xogayxcf yf haxuEf nBuBnV (gr Hxd)	1T7-86-6	T0T8	µ: /b	<T0T8	T085 µ: /b	FL05	780T	. 89
vg81. Xogayxcf yf hapQEf nBuBnV (gr Hpd)	175-F5-9	T0T8	µ: /b	<T0T8	T085 µ: /b	9T0T	780T	. 1T
vg81. Xogayxcf yf fBQEf nBuBnV (gr Ud)	115-L7-.	T0T.	µ: /b	<T0T.	T085 µ: /b	9. 0F	7. 0T	. 11
vg81. Xogayxcf yf Ef EuEf nBuBnV (gr Kd)	175-95-.	T0T8	µ: /b	<T0T8	T085 µ: /b	9. 07	L90T	. 1T
vg81. Xogayxcf yf VaBuEf nBuBnV (gr s d)	115-7L-8	T0T8	µ: /b	<T0T8	T085 µ: /b	9809	7. 0T	. 89
vg81. Xogayxcf yf cEVaBuEf nBuBnV (gr NEs d)	8T5F-96-F	T0T8	µ: /b	<T0T8	T085 µ: /b	9L09	L90T	. 11
vg81. Xogayxcf yf Vf VaBuEf nBuBnV (gr s f s d)	1T7-55-.	T0T8	µ: /b	<T0T8	T085 µ: /b	960L	780T	. 16
vg81. Xogayxcf yf GyVaBuEf nBuBnV (gr Oys d)	78L89-96-F	T0T8	µ: /b	<T0T8	T085 µ: /b	F107	L50T	. 66
vg81. Xogayxcf yf GaGyuVaBuEf nBuBnV (gr Oas d)	17L-TL-7	T0T5	µ: /b	<T0T5	T0L85 µ: /b	9F01	7. 0T	. 18
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5047236)								
vg81. Xogayxcf yf t cQEf nBuBnV (gr Bd)	175-88-6	T0	µ: /b	<T0	. 085 µ: /b	960L	710T	. 89
vg81. Xogayxcf yf paEQEf nBuBnV (gr gad)	87TL-9T-1	T0T8	µ: /b	<T0T8	T085 µ: /b	9805	780T	. 89
vg81. Xogayxcf yf haxuEf nBuBnV (gr Hxd)	1T7-86-6	T0T8	µ: /b	<T0T8	T085 µ: /b	9609	780T	. 89
vg81. Xogayxcf yf hapQEf nBuBnV (gr Hpd)	175-F5-9	T0T8	µ: /b	<T0T8	T085 µ: /b	9805	780T	. 1T
vg81. Xogayxcf yf fBQEf nBuBnV (gr Ud)	115-L7-.	T0T.	µ: /b	<T0T.	T085 µ: /b	980T	7. 0T	. 11
vg81. Xogayxcf yf Ef EuEf nBuBnV (gr Kd)	175-95-.	T0T8	µ: /b	<T0T8	T085 µ: /b	9T0T	L90T	. 1T
vg81. Xogayxcf yf VaBuEf nBuBnV (gr s d)	115-7L-8	T0T8	µ: /b	<T0T8	T085 µ: /b	9T03	7. 0T	. 89
vg81. Xogayxcf yf cEVaBuEf nBuBnV (gr NEs d)	8T5F-96-F	T0T8	µ: /b	<T0T8	T085 µ: /b	970T	L90T	. 11
vg81. Xogayxcf yf Vf VaBuEf nBuBnV (gr s f s d)	1T7-55-.	T0T8	µ: /b	<T0T8	T085 µ: /b	9703	780T	. 16
vg81. Xogayxcf yf GyVaBuEf nBuBnV (gr Oys d)	78L89-96-F	T0T8	µ: /b	<T0T8	T085 µ: /b	F801	L50T	. 66

gu: a o . 8 f 4. L
WfyA UyVay o v M81TFTT9 dDaEVDaEC.
i eaEC o SOdKOv i dNSORdb,d gOY bOs
gyfjaBC o 2,i _T665_gr dSUMg_81

Sct -MuQyx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5047236) - continued								
vg81. Xogay4cfyf GQuVaBuEfnBuBV (gr Oasd)	17L-TL-7	T0T5	µ: /b	<T0T5	T0.85 µ: /b	. T.	7. 0T	. 18
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5038333)								
vg81. Xogay4cfyf BQuEa PcefEuDnVa (r USd)	756-9. -L	T0T8	µ: /b	<T0T8	T085 µ: /b	9T0l	L70T	. 17
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVa (Mar USd)	1. 5TL-18-F	T0T5	µ: /b	<T0T5	T0.85 µ: /b	. 16	LF0T	. 6.
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVa (vC USd)	6. 5. -5T-8	T0T5	µ: /b	<T0T5	T0.85 µ: /b	. TF	7T0T	. 1T
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVfaQuEfe (Mar USv)	8666F-T9-7	T0T5	µ: /b	<T0T5	T0.85 µ: /b	960T	7T0T	. 1T
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVfaQuEfe (vC USv)	. L9. -99-8	T0T5	µ: /b	<T0T5	T0.85 µ: /b	. T8	7T0T	. 1T
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVfuBaQBuBnV (Mar USdd)	8155-1. -9	T0T8	µ: /b	<T0T8	T085 µ: /b	9L0T	L50T	. 1L
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVfuBaQBuBnV (vC USdd)	899. -5T-L	T0T8	µ: /b	<T0T8	T085 µ: /b	9L05	L. 0T	. 15
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5039965)								
vg81. Xogay4cfyf BQuEa PcefEuDnVa (r USd)	756-9. -L	T0T8	µ: /b	<T0T8	T085 µ: /b	980	L70T	. 17
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVa (Mar USd)	1. 5TL-18-F	T0T5	µ: /b	<T0T5	T0.85 µ: /b	960L	LF0T	. 6.
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVa (vC USd)	6. 5. -5T-8	T0T5	µ: /b	<T0T5	T0.85 µ: /b	FL05	7T0T	. 1T
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVfaQuEfe (Mar USv)	8666F-T9-7	T0T5	µ: /b	<T0T5	T0.85 µ: /b	9L08	7T0T	. 1T
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVfaQuEfe (vC USv)	. L9. -99-8	T0T5	µ: /b	<T0T5	T0.85 µ: /b	9806	7T0T	. 1T
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVfuBaQBuBnV (Mar USdd)	8155-1. -9	T0T8	µ: /b	<T0T8	T085 µ: /b	9L0	L50T	. 1L
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVfuBaQBuBnV (vC USdd)	899. -5T-L	T0T8	µ: /b	<T0T8	T085 µ: /b	9601	L. 0T	. 15
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5047236)								
vg81. Xogay4cfyf BQuEa PcefEuDnVa (r USd)	756-9. -L	T0T8	µ: /b	<T0T8	T085 µ: /b	9. 0	L70T	. 17
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVa (Mar USd)	1. 5TL-18-F	T0T5	µ: /b	<T0T5	T0.85 µ: /b	. T7	LF0T	. 6.
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVa (vC USd)	6. 5. -5T-8	T0T5	µ: /b	<T0T5	T0.85 µ: /b	9L05	7T0T	. 1T
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVfaQuEfe (Mar USv)	8666F-T9-7	T0T5	µ: /b	<T0T5	T0.85 µ: /b	9606	7T0T	. 1T
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVfaQuEfe (vC USv)	. L9. -99-8	T0T5	µ: /b	<T0T5	T0.85 µ: /b	9L06	7T0T	. 1T
vg81. XoK-MaQlepay4cfyf BQuEa PcefEuDnVfuBaQBuBnV (Mar USdd)	8155-1. -9	T0T8	µ: /b	<T0T8	T085 µ: /b	. T6	L50T	. 1L
vg81. XoK-vQlepay4cfyf BQuEa PcefEuDnVfuBaQBuBnV (vC USdd)	899. -5T-L	T0T8	µ: /b	<T0T8	T085 µ: /b	9T07	L. 0T	. 15
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5038333)								

Sct -MuGyx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5038333) - continued								
vg81. Xo6c8 r ecf yf Qaef DayPceff EnBuBnV (6c8 r OS)	757. 86-78-6	T0f5	µ: /b	<T0f5	T0816 µ: /b	910	L10f	. 61
vg81. XoLc8 r ecf yf Qaef DayPceff EnBuBnV (Lc8 r OS)	87L. 9-97-8	T0f5	µ: /b	<T0f5	T081F µ: /b	9709	L60f	. 6T
vg81. XoFc8 r ecf yf Qaef DayPceff EnBuBnV (Fc8 r OS)	19. TF-16-6	T0f5	µ: /b	<T0f5	T086 µ: /b	9F0	L70f	. 1F
vg81. Xo. Tc8 r ecf yf Qaef DayPceff EnBuBnV (. Tc8 r OS)	. 8T88L-LT-T	T0f5	µ: /b	<T0f5	T0868 µ: /b	7F08	7T0f	. 1T
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5039965)								
vg81. Xo6c8 r ecf yf Qaef DayPceff EnBuBnV (6c8 r OS)	757. 86-78-6	T0f5	µ: /b	<T0f5	T0816 µ: /b	950F	L10f	. 61
vg81. XoLc8 r ecf yf Qaef DayPceff EnBuBnV (Lc8 r OS)	87L. 9-97-8	T0f5	µ: /b	<T0f5	T081F µ: /b	. T1	L60f	. 6T
vg81. XoFc8 r ecf yf Qaef DayPceff EnBuBnV (Fc8 r OS)	19. TF-16-6	T0f5	µ: /b	<T0f5	T086 µ: /b	990F	L70f	. 1F
vg81. Xo. Tc8 r ecf yf Qaef DayPceff EnBuBnV (. Tc8 r OS)	. 8T88L-LT-T	T0f5	µ: /b	<T0f5	T0868 µ: /b	F507	7T0f	. 1T
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5047236)								
vg81. Xo6c8 r ecf yf Qaef DayPceff EnBuBnV (6c8 r OS)	757. 86-78-6	T0f5	µ: /b	<T0f5	T0816 µ: /b	. T8	L10f	. 61
vg81. XoLc8 r ecf yf Qaef DayPceff EnBuBnV (Lc8 r OS)	87L. 9-97-8	T0f5	µ: /b	<T0f5	T081F µ: /b	. T.	L60f	. 6T
vg81. XoFc8 r ecf yf Qaef DayPceff EnBuBnV (Fc8 r OS)	19. TF-16-6	T0f5	µ: /b	<T0f5	T086 µ: /b	. TT	L70f	. 1F
vg81. Xo. Tc8 r ecf yf Qaef DayPceff EnBuBnV (. Tc8 r OS)	. 8T88L-LT-T	T0f5	µ: /b	<T0f5	T0868 µ: /b	9801	7T0f	. 1T
EP231P: PFAS Sums (QCLot: 5038333)								
vg81. XoScD f 4gr dS	----	T0f.	µ: /b	<T0f.	----	----	----	----
vg81. XoScD f 4gr HxS uEV gr US	155-6L-6/. 7 L1-81-.	T0f.	µ: /b	<T0f.	----	----	----	----
vg81. XoScD f 4gr dS (Wd s vR bnPC)	----	T0f.	µ: /b	<T0f.	----	----	----	----
EP231P: PFAS Sums (QCLot: 5039965)								
vg81. XoScD f 4gr dS	----	T0f.	µ: /b	<T0f.	----	----	----	----
vg81. XoScD f 4gr HxS uEV gr US	155-6L-6/. 7 L1-81-.	T0f.	µ: /b	<T0f.	----	----	----	----
vg81. XoScD f 4gr dS (Wd s vR bnPC)	----	T0f.	µ: /b	<T0f.	----	----	----	----
EP231P: PFAS Sums (QCLot: 5047236)								
vg81. XoScD f 4gr dS	----	T0f.	µ: /b	<T0f.	----	----	----	----
vg81. XoScD f 4gr HxS uEV gr US	155-6L-6/. 7 L1-81-.	T0f.	µ: /b	<T0f.	----	----	----	----
vg81. XoScD f 4gr dS (Wd s vR bnPC)	----	T0f.	µ: /b	<T0f.	----	----	----	----

Matrix Spike (MS) Report

Cha qcueC BfEGYf e GayD MuGyx SpnAa (MS) ya4ayP C uE nEQueut f yuCyl PpeC PuDpea PpnAaV wnCh u yapyaPaEQCma PaC f 4 Cuy. aC uEueGaP0 Cha pcypf Pa f 4 CnP Qi puyuDaGay nP C DfEnCy pfGaEQue DuGyx a44aBCP fE uEueGa yaBf mayaP0SQCQB RaBf mayl bnDnP uP payeut f yuCyl s uQ. QcueC UtjaBCmaP (s QUP)0,VaueyaBf mayl yuE: aP PQGaV Dul t a wumaV nE Cha amaECf 4PuDpea DuGyx nEQayAayaEBa0

Sct -MuGyx: **SOIL**

Matrix Spike (MS) Report		
Spike	SpikeRecovery(%)	Acceptable Limits (%)

g u: a o . 6 f 4. L
Wf yA UyVay o v M81TFTT9 dDaEVDaEC.
i ea EC o SOdKOv i dNSORdb,d gOY bOs
g yf jaBC o 2,i _T665_gr dSUMg_81

Sct -MuQnx: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5038779)							
v M81TFTT9-TT8	T665_Ss 6L1_81T5T8	v g81. Xogay4cf yf t cQEa PceF EnBuBnV (gr BS)	175-71-5	T0TT. . . D: /A:	7L0	780T	. 8F
		v g81. Xogay4cf yf paEQEa PceF EnBuBnV (gr gaS)	87TL-9. -6	T0TT. . F D: /A:	750L	710T	. 81
		v g81. Xogay4cf yf haxuEa PceF EnBuBnV (gr HxS)	155-6L-6	T0TT. . 6 D: /A:	F506	L70T	. 1T
		v g81. Xogay4cf yf hapQEa PceF EnBuBnV (gr HpS)	175-98-F	T0TT. . 9 D: /A:	F601	7T0T	. 18
		v g81. Xogay4cf yf f BQEa PceF EnBuBnV (gr US)	. 7L1-81-.	T0TT. . L D: /A:	# 6. 06	LF0T	. 1L
		v g81. Xogay4cf yf VaBuEa PceF EnBuBnV (gr s S)	115-77-1	T0TT. 8. D: /A:	7L0L	590T	. 16
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5038779)							
v M81TFTT9-TT8	T665_Ss 6L1_81T5T8	v g81. Xogay4cf yf t cQEf nBuBnV (gr Bd)	175-88-6	T0TTL85 D: /A:	# LF08	7. 0T	. 15
		v g81. Xogay4cf yf paEQEf nBuBnV (gr gad)	87TL-9T-1	T0TT. 85 D: /A:	9T08	L90T	. 18
		v g81. Xogay4cf yf haxuEf nBuBnV (gr Hxd)	1T7-86-6	T0TT. 85 D: /A:	F807	7T0T	. 18
		v g81. Xogay4cf yf hapQEf nBuBnV (gr Hpd)	175-F5-9	T0TT. 85 D: /A:	F. 0T	7. 0T	. 1.
		v g81. Xogay4cf yf f BQEf nBuBnV (gr Ud)	115-L7-.	T0TT. 85 D: /A:	F809	L90T	. 11
		v g81. Xogay4cf yf Ef EuEf nBuBnV (gr Kd)	175-95-.	T0TT. 85 D: /A:	FT0F	780T	. 89
		v g81. Xogay4cf yf VaBuEf nBuBnV (gr s d)	115-7L-8	T0TT. 85 D: /A:	F10	L90T	. 11
		v g81. Xogay4cf yf cEVaBuEf nBuBnV (gr NEs d)	8T5F-96-F	T0TT. 85 D: /A:	7905	L60T	. 1L
		v g81. Xogay4cf yf VfVaBuEf nBuBnV (gr s f s d)	1T7-55-.	T0TT. 85 D: /A:	F803	L90T	. 15
		v g81. Xogay4cf yf QnVaBuEf nBuBnV (gr Oys d)	78L89-96-F	T0TT. 85 D: /A:	F50F	LL0T	. 19
		v g81. Xogay4cf yf QaQuVaBuEf nBuBnV (gr Oas d)	17L-TL-7	T0TT1. 8 D: /A:	790T	L90T	. 11
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5038779)							
v M81TFTT9-TT8	T665_Ss 6L1_81T5T8	v g81. Xogay4cf yf f BQEa PceF EuDnVa (r USd)	756-9. -L	T0TT. 85 D: /A:	7L06	L70T	. 17
		v g81. XoK-MaQl epay4cf yf f BQEa PceF EuDnVa (Mar USd)	1. 5TL-18-F	T0TT1. 8 D: /A:	7706	7T0T	. 1T
		v g81. XoK-vQl epay4cf yf f BQEa PceF EuDnVa (vC USd)	6. 5. -5T-8	T0TT1. 8 D: /A:	# LF07	7T0T	. 1T
		v g81. XoK-MaQl epay4cf yf f BQEa PceF EuDnVf aCuEf e (Mar USv)	8666F-T9-7	T0TT1. 8 D: /A:	7606	7T0T	. 1T
		v g81. XoK-vQl epay4cf yf f BQEa PceF EuDnVf aCuEf e (vC USv)	. L9. -99-8	T0TT1. 8 D: /A:	790L	7T0T	. 1T
		v g81. XoK-MaQl epay4cf yf f BQEa PceF EuDnVf uBaQB uBnV (Mar USdd)	8155-1. -9	T0TT. 85 D: /A:	790F	L10T	. 66
		v g81. XoK-vQl epay4cf yf f BQEa PceF EuDnVf uBaQB uBnV (vC USdd)	899. -5T-L	T0TT. 85 D: /A:	# 5606	L. 0T	. 19
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5038779)							
v M81TFTT9-TT8	T665_Ss 6L1_81T5T8	v g81. Xo6o8 r ecf yf Qae Day PceF EnBuBnV (6o8 r OS)	757. 86-78-6	T0TT. . 7 D: /A:	F809	L80T	. 65
		v g81. XoLo8 r ecf yf Qae Day PceF EnBuBnV (Lo8 r OS)	87L. 9-97-8	T0TT. . 9 D: /A:	F903	L60T	. 6T
		v g81. XoFo8 r ecf yf Qae Day PceF EnBuBnV (Fo8 r OS)	19. TF-16-6	T0TT. 8 D: /A:	7603	L50T	. 17
		v g81. Xo. To8 r ecf yf Qae Day PceF EnBuBnV (. To8 r OS)	. 8T88L-LT-T	T0TT. 8. D: /A:	# 5F05	7T0T	. 1T

Sct -MuQnx: **WATER**

		Matrix Spike (MS) Report			
		Spike	SpikeRecovery(%)	Acceptable Limits (%)	
		Concentration	*MS*	*Low*	*High*

gu: a o . 5 f 4. L
Wf yA UyVay o v M81TFTT9 dD aEVD aEC.
i aaEC o SOdKOv i dNSORdb,d gOY bOs
gyf jaBC o 2,i _T665_gr dSUMg_81

Sct -MuQyx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5038333)							
v M81TFTT9-T8.	T665_MW15L_81T5T5	v g 81. Xogay4cf yf t cQEa Pcef EnBuBnV (gr BS)	175-71-5	T088 µ: /b	980L	780T	. 1T
		v g 81. Xogay4cf yf paEQEa Pcef EnBuBnV (gr gaS)	87TL-9. -6	T085 µ: /b	980	7. 0T	. 87
		v g 81. Xogay4cf yf haxuEa Pcef EnBuBnV (gr HxS)	155-6L-6	T088F µ: /b	F90F	LF0T	. 1.
		v g 81. Xogay4cf yf hapQEa Pcef EnBuBnV (gr HpS)	175-98-F	T081F µ: /b	F90L	L90T	. 16
		v g 81. Xogay4cf yf f BQEa Pcef EnBuBnV (gr US)	. 7L1-81-.	T018 µ: /b	F806	L50T	. 6T
		v g 81. Xogay4cf yf VaBuEa Pcef EnBuBnV (gr s S)	115-77-1	T086. µ: /b	750	510T	. 68
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5039965)							
v M81TFTT9-T. T	T665_SW6T9_81T5T6	v g 81. Xogay4cf yf t cQEa Pcef EnBuBnV (gr BS)	175-71-5	T088 µ: /b	980T	780T	. 1T
		v g 81. Xogay4cf yf paEQEa Pcef EnBuBnV (gr gaS)	87TL-9. -6	T085 µ: /b	. T1	7. 0T	. 87
		v g 81. Xogay4cf yf haxuEa Pcef EnBuBnV (gr HxS)	155-6L-6	T088F µ: /b	9F05	LF0T	. 1.
		v g 81. Xogay4cf yf hapQEa Pcef EnBuBnV (gr HpS)	175-98-F	T081F µ: /b	. T8	L90T	. 16
		v g 81. Xogay4cf yf f BQEa Pcef EnBuBnV (gr US)	. 7L1-81-.	T018 µ: /b	F. 09	L50T	. 6T
		v g 81. Xogay4cf yf VaBuEa Pcef EnBuBnV (gr s S)	115-77-1	T086. µ: /b	FT07	510T	. 68
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5038333)							
v M81TFTT9-T8.	T665_MW15L_81T5T5	v g 81. Xogay4cf yf t cQEf nBuBnV (gr Bd)	175-88-6	. 085 µ: /b	760	710T	. 89
		v g 81. Xogay4cf yf paEQEf nBuBnV (gr gad)	87TL-9T-1	T085 µ: /b	F70T	780T	. 89
		v g 81. Xogay4cf yf haxuEf nBuBnV (gr Hxd)	1T7-86-6	T085 µ: /b	F508	780T	. 89
		v g 81. Xogay4cf yf hapQEf nBuBnV (gr Hpd)	175-F5-9	T085 µ: /b	F50T	780T	. 1T
		v g 81. Xogay4cf yf f BQEf nBuBnV (gr Ud)	115-L7-.	T085 µ: /b	FF0T	7. 0T	. 11
		v g 81. Xogay4cf yf Ef EuEf nBuBnV (gr Kd)	175-95-.	T085 µ: /b	910	L90T	. 1T
		v g 81. Xogay4cf yf VaBuEf nBuBnV (gr s d)	115-7L-8	T085 µ: /b	770I	7. 0T	. 89
		v g 81. Xogay4cf yf cEVaBuEf nBuBnV (gr NEs d)	8T5F-96-F	T085 µ: /b	F80	L90T	. 11
		v g 81. Xogay4cf yf Vf VaBuEf nBuBnV (gr s f s d)	1T7-55-.	T085 µ: /b	F508	780T	. 16
		v g 81. Xogay4cf yf GyVaBuEf nBuBnV (gr Oys d)	78L89-96-F	T085 µ: /b	F80L	L50T	. 66
		v g 81. Xogay4cf yf GaQuVaBuEf nBuBnV (gr Oas d)	17L-TL-7	T0L85 µ: /b	FF0	7. 0T	. 18
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5039965)							
v M81TFTT9-T. T	T665_SW6T9_81T5T6	v g 81. Xogay4cf yf t cQEf nBuBnV (gr Bd)	175-88-6	. 085 µ: /b	9F0T	710T	. 89
		v g 81. Xogay4cf yf paEQEf nBuBnV (gr gad)	87TL-9T-1	T085 µ: /b	FF07	780T	. 89
		v g 81. Xogay4cf yf haxuEf nBuBnV (gr Hxd)	1T7-86-6	T085 µ: /b	F708	780T	. 89
		v g 81. Xogay4cf yf hapQEf nBuBnV (gr Hpd)	175-F5-9	T085 µ: /b	910	780T	. 1T
		v g 81. Xogay4cf yf f BQEf nBuBnV (gr Ud)	115-L7-.	T085 µ: /b	9. 0T	7. 0T	. 11
		v g 81. Xogay4cf yf Ef EuEf nBuBnV (gr Kd)	175-95-.	T085 µ: /b	970	L90T	. 1T
		v g 81. Xogay4cf yf VaBuEf nBuBnV (gr s d)	115-7L-8	T085 µ: /b	F90	7. 0T	. 89
		v g 81. Xogay4cf yf cEVaBuEf nBuBnV (gr NEs d)	8T5F-96-F	T085 µ: /b	FL0T	L90T	. 11
		v g 81. Xogay4cf yf Vf VaBuEf nBuBnV (gr s f s d)	1T7-55-.	T085 µ: /b	F10T	780T	. 16
		v g 81. Xogay4cf yf GyVaBuEf nBuBnV (gr Oys d)	78L89-96-F	T085 µ: /b	7. 05	L50T	. 66
		v g 81. Xogay4cf yf GaQuVaBuEf nBuBnV (gr Oas d)	17L-TL-7	T0L85 µ: /b	F90	7. 0T	. 18
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5038333)							

Sct -MuQyx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5038333) - continued							
v M81TFTT9-T8.	T665_MW15L_81T5T5	v g81. Xogay4ecf yf f BQuEa PceF EuDnVa (r USd)	756-9. -L	T085 µ: /b	FT0	L70T	. 17
		v g81. XoK-MaQl epay4ecf yf f BQuEa PceF EuDnVa (Mar USd)	1. 5TL-18-F	T0L85 µ: /b	FT0I	LF0T	. 6.
		v g81. XoK-vQl epay4ecf yf f BQuEa PceF EuDnVa (v C USd)	6. 5. -5T-8	T0L85 µ: /b	750B	7T0T	. 1T
		v g81. XoK-MaQl epay4ecf yf f BQuEa PceF EuDnVfaQuEfe (Mar USv)	8666F-T9-7	T0L85 µ: /b	7F0T	7T0T	. 1T
		v g81. XoK-vQl epay4ecf yf f BQuEa PceF EuDnVfaQuEfe (v C USv)	. L9. -99-8	T0L85 µ: /b	F70	7T0T	. 1T
		v g81. XoK-MaQl epay4ecf yf f BQuEa PceF EuDnVfuBaQB uBnV (Mar USdd)	8155-1. -9	T085 µ: /b	7T07	L50T	. 1L
		v g81. XoK-vQl epay4ecf yf f BQuEa PceF EuDnVfuBaQB uBnV (v C USdd)	899. -5T-L	T085 µ: /b	750L	L. 0T	. 15
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5039965)							
v M81TFTT9-T. T	T665_SW6T9_81T5T6	v g81. Xogay4ecf yf f BQuEa PceF EuDnVa (r USd)	756-9. -L	T085 µ: /b	980L	L70T	. 17
		v g81. XoK-MaQl epay4ecf yf f BQuEa PceF EuDnVa (Mar USd)	1. 5TL-18-F	T0L85 µ: /b	9L0I	LF0T	. 6.
		v g81. XoK-vQl epay4ecf yf f BQuEa PceF EuDnVa (v C USd)	6. 5. -5T-8	T0L85 µ: /b	710I	7T0T	. 1T
		v g81. XoK-MaQl epay4ecf yf f BQuEa PceF EuDnVfaQuEfe (Mar USv)	8666F-T9-7	T0L85 µ: /b	910B	7T0T	. 1T
		v g81. XoK-vQl epay4ecf yf f BQuEa PceF EuDnVfaQuEfe (v C USv)	. L9. -99-8	T0L85 µ: /b	F90B	7T0T	. 1T
		v g81. XoK-MaQl epay4ecf yf f BQuEa PceF EuDnVfuBaQB uBnV (Mar USdd)	8155-1. -9	T085 µ: /b	9. 0B	L50T	. 1L
		v g81. XoK-vQl epay4ecf yf f BQuEa PceF EuDnVfuBaQB uBnV (v C USdd)	899. -5T-L	T085 µ: /b	7L0T	L. 0T	. 15
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5038333)							
v M81TFTT9-T8.	T665_MW15L_81T5T5	v g81. Xo6o8 r ecf yf Qae DayPceF EnBuBnV (6o8 r OS)	757. 86-78-6	T0816 µ: /b	990	L10T	. 61
		v g81. XoLo8 r ecf yf Qae DayPceF EnBuBnV (Lo8 r OS)	87L. 9-97-8	T081F µ: /b	990F	L60T	. 6T
		v g81. XoFo8 r ecf yf Qae DayPceF EnBuBnV (Fo8 r OS)	19. TF-16-6	T086 µ: /b	F90	L70T	. 1F
		v g81. Xo. To8 r ecf yf Qae DayPceF EnBuBnV (. To8 r OS)	. 8T88L-LT-T	T0868 µ: /b	7T0T	7T0T	. 1T
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5039965)							
v M81TFTT9-T. T	T665_SW6T9_81T5T6	v g81. Xo6o8 r ecf yf Qae DayPceF EnBuBnV (6o8 r OS)	757. 86-78-6	T0816 µ: /b	950B	L10T	. 61
		v g81. XoLo8 r ecf yf Qae DayPceF EnBuBnV (Lo8 r OS)	87L. 9-97-8	T081F µ: /b	. T5	L60T	. 6T
		v g81. XoFo8 r ecf yf Qae DayPceF EnBuBnV (Fo8 r OS)	19. TF-16-6	T086 µ: /b	. TL	L70T	. 1F
		v g81. Xo. To8 r ecf yf Qae DayPceF EnBuBnV (. To8 r OS)	. 8T88L-LT-T	T0868 µ: /b	790T	7T0T	. 1T

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2308009**	Page	: 1 of 6
Amendment	: **1**		
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: +3186549 9309
Project	: VIC_0445_PFASOMP_R8	Date Samples d eceive-	: 062May2R0R8
Site	: VIC_0445_PFASOMP_Public_Lan-	Issue Date	: 192May2R0R8
Sampler	: [redacted]	No. of samples receive-	: RQ
Or- er number	: 2	No. of samples analyse-	: RQ

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief metho- summaries an- references are also provi- e- to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagge- in the (uality Control)(CWd eport.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

MatriG **SOIL**

Compoun- 7 roup Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EPR81A: PerfluoroalUyl Sulfonic Aci- s	EMR8060092200R	0445_SD438_R8050R	**Perfluorooctane sulfonic acid (PFOS)**	1Q382R821	41.4 %	36.02183%	**Recovery less than lower data quality objective**
EPR81B: PerfluoroalUyl CarboGylic Aci- s	EMR8060092200R	0445_SD438_R8050R	**Perfluorobutanoic acid (PFBA)**	8Q52RR24	36.R %	Q1.02185%	**Recovery less than lower data quality objective**
EPR81C: PerfluoroalUyl Sulfonami- es	EMR8060092200R	0445_SD438_R8050R	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	41512502R	36.Q %	Q0.02180%	**Recovery less than lower data quality objective**
EPR81C: PerfluoroalUyl Sulfonami- es	EMR8060092200R	0445_SD438_R8050R	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	R99125023	54.4 %	31.02189%	**Recovery less than lower data quality objective**
EPR81D:)n:RWFluorotelomer Sulfonic Aci- s	EMR8060092200R	0445_SD438_R8050R	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	1R0RR32302Q	56.5 %	Q0.02180%	**Recovery less than lower data quality objective**

Analysis Holding Time Compliance

If samples are i- entifie- belo/ as having been analyse- or eGracte- outsi- e of recommen- e- hol- ing times, this shoul- be taUen into consi- eration / hen interpreting results.

This report summarizes eGraction ; preparation an- analysis times an- compares each / ith ALS recommen- e- hol- ing times)referencing YSEPA Sk 643, AP&A, AS an- NEPMW base- on the sample container provi- e- . Dates reporte- represent first - ate of eGraction or analysis an- preclu- e subsewuent - ilutions an- reruns. A listing of breaches)if anyWis provi- e- herein.

&ol- ing time for leachate metho- s)e.g. TCLPW vary accor- ing to the analytes reporte- . Assessment compares the leach - ate / ith the shortest analyte hol- ing time for the ewuivalent soil metho- . These are: organics 14 - ays, mercury R6 - ays q other metals 160 - ays. A recor- e- breach - oes not guarantee a breach for all non2volatile parameters.

&ol- ing times for ***VOC in soils*** vary accor- ing to analytes of interest. Vinyl Chlori- e an- Styrene hol- ing time is Q- aysH others 14 - ays. A recor- e- breach - oes not guarantee a breach for all VOC analytes an- shoul- be verifie- in case the reporte- breach is a false positive or Vinyl Chlori- e an- Styrene are not Uey analytes of interest;concern.

MatriG **SOIL** Evaluation: × = &ol- ing time breach H✓ = k ithin hol- ing time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0445_SD4R4_R8050R, 0445_SD438_R8050R	**02-May-2023**	**----**	2222	2222	**09-May-2023**	132May2R0R8	✓
HDPE Soil Jar (EA055) 0445_SD41R_R80505	**05-May-2023**	**----**	2222	2222	**09-May-2023**	192May2R0R8	✓
HDPE Soil Jar (EA055) 0445_SD895_R80503	**06-May-2023**	**----**	2222	2222	**09-May-2023**	R02May2R0R8	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0445_SD4R4_R8050R, 0445_SD438_R8050R	**02-May-2023**	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD41R_R80505	**05-May-2023**	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD895_R80503	**06-May-2023**	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓

MatriG **SOIL**

Evaluation: × = &ol- ing time breach H✓ = k ithin hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0445_SD4R4_R8050R, 0445_SD438_R8050R	**02-May-2023**	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD41R_R80505	**05-May-2023**	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD895_R80503	**06-May-2023**	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0445_SD4R4_R8050R, 0445_SD438_R8050R	**02-May-2023**	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD41R_R80505	**05-May-2023**	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD895_R80503	**06-May-2023**	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0445_SD4R4_R8050R, 0445_SD438_R8050R	**02-May-2023**	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD41R_R80505	**05-May-2023**	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD895_R80503	**06-May-2023**	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0445_SD4R4_R8050R, 0445_SD438_R8050R	**02-May-2023**	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD41R_R80505	**05-May-2023**	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓
HDPE Soil Jar (EP231X) 0445_SD895_R80503	**06-May-2023**	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	192Jun2R0R8	✓

MatriG **WATER**

Evaluation: × = &ol- ing time breach H✓ = k ithin hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

MatriG **WATER**

Evaluation: × = &ol- ing time breach H✓ = k ithin hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0445_Sk 4R4_R8050R, 0445_Sk 484_R8050R,	**02-May-2023** 0445_Sk 438_R8050R, 0445_Sk 481_R8050R	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	R92Oct2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 480_R80504, 0445_Mk 830_R80504, 0445_Sk 890_R80504, 0445_Sk 43R_R80504, 0445_Mk 831_R80504, 0445_Sk 413_R80504,	**04-May-2023** 0445_Sk 404_R80504, 0445_Sk 409_R80504, 0445_Sk 4RQ_R80504, 0445_Sk 48R_R80504, 0445_Sk 898_R80504, 0445_Mk 85Q_R80504	**10-May-2023**	812Oct2R0R8	✓	**11-May-2023**	812Oct2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Mk 853_R80505, 0445_Sk 408_R80505	**05-May-2023** 0445_Sk 41R_R80505,	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	012Nov2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 4Q0_R80503, 0445_Sk 896_R80503	**06-May-2023** 0445_Sk 405_R80503,	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	0R2Nov2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 895_R80503	**06-May-2023**	**13-May-2023**	0R2Nov2R0R8	✓	**15-May-2023**	0R2Nov2R0R8	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0445_Sk 4R4_R8050R, 0445_Sk 484_R8050R,	**02-May-2023** 0445_Sk 438_R8050R, 0445_Sk 481_R8050R	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	R92Oct2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 480_R80504, 0445_Mk 830_R80504, 0445_Sk 890_R80504, 0445_Sk 43R_R80504, 0445_Mk 831_R80504, 0445_Sk 413_R80504,	**04-May-2023** 0445_Sk 404_R80504, 0445_Sk 409_R80504, 0445_Sk 4RQ_R80504, 0445_Sk 48R_R80504, 0445_Sk 898_R80504, 0445_Mk 85Q_R80504	**10-May-2023**	812Oct2R0R8	✓	**11-May-2023**	812Oct2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Mk 853_R80505, 0445_Sk 408_R80505	**05-May-2023** 0445_Sk 41R_R80505,	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	012Nov2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 4Q0_R80503, 0445_Sk 896_R80503	**06-May-2023** 0445_Sk 405_R80503,	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	0R2Nov2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 895_R80503	**06-May-2023**	**13-May-2023**	0R2Nov2R0R8	✓	**15-May-2023**	0R2Nov2R0R8	✓

MatriG **WATER**

Evaluation: × = &ol- ing time breach H✓ = k ithin hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0445_Sk 4R4_R8050R, 0445_Sk 484_R8050R,	**02-May-2023** 0445_Sk 438_R8050R, 0445_Sk 481_R8050R	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	R92Oct2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 480_R80504, 0445_Mk 830_R80504, 0445_Sk 890_R80504, 0445_Sk 43R_R80504, 0445_Mk 831_R80504, 0445_Sk 413_R80504,	**04-May-2023** 0445_Sk 404_R80504, 0445_Sk 409_R80504, 0445_Sk 4RQ_R80504, 0445_Sk 48R_R80504, 0445_Sk 898_R80504, 0445_Mk 85Q_R80504	**10-May-2023**	812Oct2R0R8	✓	**11-May-2023**	812Oct2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Mk 853_R80505, 0445_Sk 408_R80505	**05-May-2023** 0445_Sk 41R_R80505,	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	012Nov2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 4Q0_R80503, 0445_Sk 896_R80503	**06-May-2023** 0445_Sk 405_R80503,	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	0R2Nov2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 895_R80503	**06-May-2023**	**13-May-2023**	0R2Nov2R0R8	✓	**15-May-2023**	0R2Nov2R0R8	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0445_Sk 4R4_R8050R, 0445_Sk 484_R8050R,	**02-May-2023** 0445_Sk 438_R8050R, 0445_Sk 481_R8050R	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	R92Oct2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 480_R80504, 0445_Mk 830_R80504, 0445_Sk 890_R80504, 0445_Sk 43R_R80504, 0445_Mk 831_R80504, 0445_Sk 413_R80504,	**04-May-2023** 0445_Sk 404_R80504, 0445_Sk 409_R80504, 0445_Sk 4RQ_R80504, 0445_Sk 48R_R80504, 0445_Sk 898_R80504, 0445_Mk 85Q_R80504	**10-May-2023**	812Oct2R0R8	✓	**11-May-2023**	812Oct2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Mk 853_R80505, 0445_Sk 408_R80505	**05-May-2023** 0445_Sk 41R_R80505,	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	012Nov2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 4Q0_R80503, 0445_Sk 896_R80503	**06-May-2023** 0445_Sk 405_R80503,	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	0R2Nov2R0R8	✓
HDPE (no PTFE) (EP231X) 0445_Sk 895_R80503	**06-May-2023**	**13-May-2023**	0R2Nov2R0R8	✓	**15-May-2023**	0R2Nov2R0R8	✓

MatriG **WATER**

Evaluation: × = &ol- ing time breach H✓ = k ithin hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_Sk 4R4_R8050R, 0445_Sk 438_R8050R, 0445_Sk 484_R8050R, 0445_Sk 481_R8050R	**02-May-2023**	**10-May-2023**	R92Oct2R0R8	✓	**11-May-2023**	R92Oct2R0R8	✓
HDPE (no PTFE) (EP231X)							
0445_Sk 480_R80504, 0445_Sk 404_R80504, 0445_Mk 830_R80504, 0445_Sk 409_R80504, 0445_Sk 890_R80504, 0445_Sk 4RQ_R80504, 0445_Sk 43R_R80504, 0445_Sk 48R_R80504, 0445_Mk 831_R80504, 0445_Sk 898_R80504, 0445_Sk 413_R80504, 0445_Mk 85Q_R80504	**04-May-2023**	**10-May-2023**	812Oct2R0R8	✓	**11-May-2023**	812Oct2R0R8	✓
HDPE (no PTFE) (EP231X)							
0445_Mk 853_R80505, 0445_Sk 41R_R80505, 0445_Sk 408_R80505	**05-May-2023**	**10-May-2023**	012Nov2R0R8	✓	**11-May-2023**	012Nov2R0R8	✓
HDPE (no PTFE) (EP231X)							
0445_Sk 4Q0_R80503, 0445_Sk 405_R80503, 0445_Sk 896_R80503	**06-May-2023**	**10-May-2023**	0R2Nov2R0R8	✓	**11-May-2023**	0R2Nov2R0R8	✓
HDPE (no PTFE) (EP231X)							
0445_Sk 895_R80503	**06-May-2023**	**13-May-2023**	0R2Nov2R0R8	✓	**15-May-2023**	0R2Nov2R0R8	✓

Quality Control Parameter Frequency Compliance

The follo/ ing report summarises the frewuency of laboratory (C samples analyse- / ithin the analytical lot)sWn / hich the submitte- sample)sW as)/ ereWprocesse- . Actual rate shoul- be greater than or ewual to the eQpecte- rate. A listing of breaches is provi- e- in the Summary of Outliers.

MatriG **SOIL**

Evaluation: × = (uality Control frewuency not / ithin specification H✓ = (uality Control frewuency / ithin specification.

(uality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates)DYPW							
Moisture Content	EA055	R	R0	**10.00**	**10.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	R	19	**10.53**	**10.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-
Laboratory Control Samples)LCSW							
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	1	19	**5.26**	**5.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-
Metho- BlanUs)MBW							
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	1	19	**5.26**	**5.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-
MatriGSpiUes)MSW							
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	1	19	**5.26**	**5.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-

MatriG **WATER**

Evaluation: × = (uality Control frewuency not / ithin specification H✓ = (uality Control frewuency / ithin specification.

(uality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Reaular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates)DYPW							
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	8	80	**10.00**	**10.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-
Laboratory Control Samples)LCSW							
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	8	80	**10.00**	**5.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-
Metho- BlanUs)MBW							
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	8	80	**10.00**	**5.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-
MatriGSpiUes)MSW							
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	R	80	**6.67**	**5.00**	✓	NEPM R018 B8 q ALS (C Stan- ar-

Brief Method Summaries

The analytical proce- ures use- by the Environmental Division have been - evelope- from establishe- internationally recognize- proce- ures such as those publishe- by the YS EPA, AP&A, AS an- NEPM. In house - evelope- proce- ures are employe- in the absence of - ocumente- stan- ar- s or by client rewuest. The follo/ ing report provi- es brief - escriptions of the analytical proce- ures employe- for results reporte- in the Certificate of Analysis. Sources from / hich ALS metho- s have been - evelope- are provi- e- / ithin the Metho- Descriptions.

Analytical Methods	*Method*	*Matrix*	*Method Descriptions*
Moisture Content	EA055	SOIL	In house: A gravimetric proce- ure base- on / eight loss over a 1R hour - rying perio- at 1052110 - egrees C. This metho- is compliant / ith NEPM Sche- ule B)8W
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	SOIL	In2house: Analysis of soils by solvent eGraction follo/ e- by LC2Electrospray2MS2MS, Negative Mo- e using MdM using internal stan- ar- wuantitation. Isotopically labelle- analogues of target analytes use- as internal stan- ar- s an- surrogates are a- - e- to a portion of soil / hich is then eGracte- / ith MTBE an- an ion pairing reagent. A portion of eGract is eGchange- into the analytical solvent miGure, combine- / ith an ewual volume reagent / ater an- filtere- for analysis. Metho- proce- ures an- - ata wuality objectives conform to YS DoD (SM 5.8, table B215 rewuirements.
Per2an- PolyfluoroalUyl Substances)PFASWby LCMSMS	EPR81X	k ATEd	In2house: Analysis of fresh an- saline / aters by Soli- Phase EGraction)SPEWfollo/ e- by LC2Electrospray2MS2MS, Negative Mo- e using MdM an- internal stan- ar- wuantitation. Isotopically labelle- analogues of target analytes use- as internal stan- ar- s an- surrogates are a- - e- to the sample container. The entire contents are transferre- to a soli- phase eGraction)SPEWcartri- ge. The sample container is successively rinse- / ith aliwuots of the elution solvent. The elute- eGract is combine- / ith an ewual volume of reagent / ater an- a portion is filtere- for analysis. Metho- proce- ures an- - ata wuality objectives conform to YS DoD (SM 5.8, table B215 rewuirements.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
(uEChed S EGraction of Soli- s	Od7 Q1	SOIL	In house: Sewuential eGractions / ith Acetonitrile;Methanol by shaUing. EGraction efficiency ai- e- by the a- - ition of salts un- er aci- ic con- itions. k here relevant, interferences from co2eGracte- organics are remove- / ith - ispersive clean2up me- ia)- SPEW The eGract is either - ilute- or concentrate- an- eGchange- into the analytical solvent.
Soli- Phase EGraction)SPEWfor PFAS in / ater	Od7 QR	k ATEd	In2house: Isotopically labelle- analogues of target analytes use- as internal stan- ar- s an- surrogates are a- - e- to the sample container. The entire contents are transferre- to a soli- phase eGraction)SPEWcartri- ge. The sample container is successively rinse- / ith aliwuots of the elution solvent. The elute- eGract is combine- / ith an ewual volume of reagent / ater an- a portion is filtere- for analysis. Metho- proce- ures conform to YS DoD (SM 5.8, table B215 rewuirements.

CHAIN OF CUSTODY

ALS COC#: 51782 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Public_Land

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: [redacted] 08/05/23 – 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_SD424_230502		02/05/2023 05:24 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
002	0445_SD463_230502		02/05/2023 05:25 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
003	0445_SW424_230502		02/05/2023 05:26 PM	WATER	ALS: 2 Non ALS: 0	No	X			
004	0445_SW463_230502		02/05/2023 05:28 PM	WATER	ALS: 2 Non ALS: 0	No	X			
005	0445_SW434_230502		02/05/2023 05:34 PM	WATER	ALS: 2 Non ALS: 0	No	X			
006	0445_SW431_230502		02/05/2023 05:35 PM	WATER	ALS: 2 Non ALS: 0	No	X			
007	0445_SW430_230504		04/05/2023 05:41 PM	WATER	ALS: 2 Non ALS: 0	No	X			
008	0445_SW404_230504		04/05/2023 05:46 PM	WATER	ALS: 6 Non ALS: 0	No	X			Extra bottles for Lab QC
009	0445_MW360_230504		04/05/2023 05:51 PM	WATER	ALS: 2 Non ALS: 0	No	X			

SCANNED

Environmental Division
Melbourne
Work Order Reference
EM2308009

BW 9/5

Telephone : +61-3-8549 9600

CHAIN OF CUSTODY

ALS COC#: 51782 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Public_Land

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: RB 08/05/23 - 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_SW409_230504		04/05/2023 05:53 PM	WATER	ALS: 6 Non ALS: 0	No	X			Extra bottles for lab QC
011	0445_SW390_230504		04/05/2023 05:55 PM	WATER	ALS: 6 Non ALS: 0	No	X			Extra bottles for lab qc
012	0445_SW427_230504		04/05/2023 05:57 PM	WATER	ALS: 2 Non ALS: 0	No	X			
013	0445_SW462_230504		04/05/2023 05:58 PM	WATER	ALS: 2 Non ALS: 0	No	X			
014	0445_SW432_230504		04/05/2023 05:59 PM	WATER	ALS: 2 Non ALS: 0	No	X			
015	0445_MW361_230504		04/05/2023 06:01 PM	WATER	ALS: 2 Non ALS: 0	No	X			
016	0445_SW393_230504		04/05/2023 06:02 PM	WATER	ALS: 6 Non ALS: 0	No	X			Extra bottles for lab qc
~~017~~ Moved	~~0445_SW370_230504~~		04/05/2023 06:03 PM	WATER	ALS: 2 Non ALS: 0	No	X			
018	0445_SW416_230504		04/05/2023 06:05 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

ALS COC#: 51782 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Public_Land

ORDER NO:

PROJECT MANAGER: [redacted] CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

PRIMARY SAMPLER: [redacted] QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: RB 08/05/23 – 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
019	0445_MW356_230504		04/05/2023 06:06 PM	WATER	ALS: 2 Non ALS: 0	No	X			
~~020~~ Moved	~~0445_SD355_230504~~		04/05/2023 06:15 PM	SOIL	ALS: 3 Non ALS: 0	No		X		Extra containers for lab qc
021	0445_MW357_230505		05/05/2023 09:21 PM	WATER	ALS: 6 Non ALS: 0	No	X			Extra bottles for lab qc
022	0445_SW412_230505		05/05/2023 09:33 PM	WATER	ALS: 2 Non ALS: 0	No	X			
023	0445_SW403_230505		05/05/2023 09:34 PM	WATER	ALS: 2 Non ALS: 0	No	X			
024	0445_SD395_230506		06/05/2023 01:44 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
025	0445_SW470_230506		06/05/2023 01:45 PM	WATER	ALS: 2 Non ALS: 0	No	X			
026	0445_SW405_230506		06/05/2023 01:45 PM	WATER	ALS: 2 Non ALS: 0	No	X			
~~027~~ ~~030~~ 30	~~0445_SW395_230506~~ 0445_SW395_230506		06/05/2023 01:48 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

ALS COC#: 51782 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 - 13:45

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Public_Land

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
028	0445_SW398_230506		06/05/2023 01:49 PM	WATER	ALS: 2 Non ALS: 0	No	X			
029	0445_SD412_2305005		08/05/2023 10:43 AM	SOIL	ALS: 1 Non ALS: 0	No		X		

CERTIFICATE OF ANALYSIS

Work Order	: **EM230809m**	Page	: 1 of 51
An et dn et 1	: **9**		
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: LEVEL 21 28 FRESHWATER PLACE SOUTHBANK VIC, AUSTRALIA 3006	Address	: 5 Westall Rd S4ringvale VIC Australia 31p1
Tele47one	: hhh	Tele47one	: - 6138+59 9609
Project	: VIC_055+_PFASOMP_23	Date Sam4les Received	: 08hMayh2023 13:5+
Order number	: h	Date Analysis Commenced	: 09hMayh2023
ChOhC number	: +1559	Issue Date	: 19hMayh2023 10:+5
Sam4ler	: [redacted]		
Site	: VIC_055+_PFASOMP_Base		
Quote number	: SY/139/19_Bandiana		
No. of sam4les received	: 85		
No. of sam4les analysed	: 80		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

T7is re4ort su4ersedes any 4revious re4ort(s) wit7 t7is reference. Results a44ly to t7e sam4le(s) as submitted, unless t7e sam4ling was conducted by ALS. T7is document s7all not be re4roduced, exce4t in full.

T7is Certificate of Analysis contains t7e following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Addi1iot al it forn a1iot per1it et 1 1o 1his repor1 will be fout d it 1he followit g separa1e a11achn et 1s: Quali1y Cot 1rol Repor1, QA/QC Con pliat ce Assessn et 1 1o assis1 wi1h Quali1y Review at d San ple Receip1 No1ifica1iot .

Signatories

T7is document 7as been electronically signed by t7e aut7orized signatories below. Electronic signing is carried out in com4liance wit7 4rocedures s4ecified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Metals Team Leader	Melbourne Inorganics, S4ringvale, VIC
	2IC Organic C7emist	Melbourne Organics, S4ringvale, VIC

General Comments

T7e analytical 4rocedures used by ALS 7ave been develo4ed from establis7ed internationally recognised 4rocedures suc7 as t7ose 4ublis7ed by t7e USEPA, APHA, AS and NEPM. In 7ouse develo4ed 4rocedures are fully validated and are often at t7e client request.

W7ere moisture determination 7as been 4erformed, results are re4orted on a dry weig7t basis.

W7ere a re4orted less t7an (<) result is 7ig7er t7an t7e LOR, t7is may be due to 4rimary sam4le extract/digestate dilution and/or insufficient sam4le for analysis.

W7ere t7e LOR of a re4orted result differs from standard LOR, t7is may be due to 7ig7 moisture content, insufficient sam4le (reduced weig7t em4loyed) or matrix interference.

W7en sam4ling time information is not 4rovided by t7e client, sam4ling dates are s7own wit7out a time com4onent. In t7ese instances, t7e time com4onent 7as been assumed by t7e laboratory for 4rocessing 4ur4oses.

W7ere a result is required to meet com4liance limits t7e associated uncertainty must be considered. Refer to t7e ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by C7emical Abstracts Services. T7e C7emical Abstracts Service is a division of t7e American C7emical Society.
LOR = Limit of re4orting
^ = T7is result is com4uted from individual analyte detections at or above t7e level of re4orting
ø = ALS is not NATA accredited for t7ese tests.
~ = Indicates an estimated value.

- EP231X: Poor matrix s4ike recovery for sam4les EM2308009h002, due to sam4le matrix interference.
- EP231X: Sam4les EM230801+ required dilution due to matrix interferences. LOR values 7ave been adjusted accordingly.
- EP231X: Poor matrix s4ike recovery for sam4le EM230801+h050 due to sam4le matrix interference.
- EP231X hPerhand Polyfluoroalkyl Substances (PFAS): Sam4les received in 20ml or 12+ml bottles 7ave been tested in accordance wit7 t7e QSM+.3 com4liant, NATA accredited met7od. 60mL or 2+0mL bottles 7ave been tested to t7e legacy QSM +.1 aligned, NATA accredited met7od.
- EP231X: Sam4les EM230801+h013, 01+, 016, 01p, 05+, 0+p, 062, 065, 068, 0p3, 0p+, 083 4ositive results 7ave been confirmed by direct injection met7od using second container.
- EP231X: Sam4le EM230801+h0p5 required dilution due to matrix interferences. LOR values 7ave been adjusted accordingly.
- Amendment (19/+/23): T7is re4ort 7as been amended as a result of a request to c7ange sam4le identification numbers (IDs) received from M.B on 18/+/23, for sam4les MW505 (#p5) and SW38p (#82). All analysis results are as 4er t7e 4revious re4ort.
- EP231: Stable isoto4e enric7ed internal standards are added to sam4les 4rior to extraction. Target com4ounds 7ave a direct analogous internal standard wit7 t7e exce4tion of PFPeS, PFH4A, PFDS, PFTrDA and 10:2 FTS. T7ese com4ounds use an internal standard t7at is c7emically related and 7as a retention time close to t7at of t7e target com4ound. T7e DQO for internal standard res4onse is +0h1+0% of t7at establis7ed at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branc7ed PFOS isomers. T7ese 4ractices are in line wit7 recommendations in t7e National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM +.3 (US DoD) requirements.

Analytical Results

SubMatrix: FRES_ WATER 6Matrix: WATER7			Sample ID	0- - m4QC3084230m05	0- - m4QCm004230m05	0- - m4QCm094230m05	0- - m4QCm024230m05	0- - m4QCm034230m05
			Sampling date / time	06hMayh2023 13:3p	06hMayh2023 15:0+	06hMayh2023 15:06	06hMayh2023 15:0p	06hMayh2023 15:0p
Compound	CAS Number	LOR	Unit	EM230809m0(0	EM230809m0(5	EM230809m0((	EM230809m0(8	EM230809m0( )
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
NG1Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NGE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: FRES_ WATER 6Matrix: WATER7				Sample ID	0- - m4QC3084230m05	0- - m4QCm004230m05	0- - m4QCm094230m05	0- - m4QCm024230m05	0- - m4QCm034230m05
				Sampling date / time	06hMayh2023 13:3p	06hMayh2023 15:0+	06hMayh2023 15:06	06hMayh2023 15:0p	06hMayh2023 15:0p
Compound	CAS Number	LOR	Unit		EM230809m0(0	EM230809m0(5	EM230809m0((	EM230809m0(8	EM230809m0( )
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued									
N0Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N0E1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N0Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h81h9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N0E1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h+0h6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids									
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h85h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sun s									
Sun of PFAS	Hhh	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sun of PFAS 6WA DER Lis17	Hhh	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP239S: PFAS Surroga1e									
93C- GPFOS	Hhh	0.02	%		) 5.5	) -.9	) 2.-	) 9.)	) 0.2
93C8GPFOA	Hhh	0.02	%		) 0.9	) 9.2	) -.(	88.5	) 2.5

Analytical Results

SubMatrix: FRES_ WATER 6Matrix: WATER7			Sample ID	0- - m4QCm0- 4230m05	[illegible]	[illegible]	[illegible]	[illegible]
			Sampling date / time	06hMayh2023 15:08	hhh	hhh	hhh	hhh
Compound	CAS Number	LOR	Unit	EM230809m0980	[illegible]	[illegible]	[illegible]	[illegible]
				Result	hhh	hhh	hhh	hhh
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	<0.01	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	<0.01	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	[illegible]	[illegible]	[illegible]	[illegible]
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	<0.01	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluoro1e1tradecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
NC3Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
NCE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]

Analytical Results

SubMatrix: FRES_ WATER 6Matrix: WATER7			Sample ID	0- - m4QCm0- 4230m05	GGG	GGG	GGG	GGG
			Sampling date / time	06hMayh2023 15:08	hhh	hhh	hhh	hhh
Compound	CAS Number	LOR	Unit	EM230809m0980	GGGGGG	GGGGGG	GGGGGG	GGGGGG
				Result	hhh	hhh	hhh	hhh
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued								
N0Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L	<0.0+	GGG	GGG	GGG	GGG
N0E1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L	<0.0+	GGG	GGG	GGG	GGG
N0Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h81h9	0.02	µg/L	<0.02	GGG	GGG	GGG	GGG
N0E1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h+0h6	0.02	µg/L	<0.02	GGG	GGG	GGG	GGG
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids								
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L	<0.0+	GGG	GGG	GGG	GGG
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L	<0.0+	GGG	GGG	GGG	GGG
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h85h5	0.0+	µg/L	<0.0+	GGG	GGG	GGG	GGG
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L	<0.0+	GGG	GGG	GGG	GGG
EP239P: PFAS Sun s								
Sun of PFAS	hhh	0.01	µg/L	<0.01	GGG	GGG	GGG	GGG
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h1	0.01	µg/L	<0.01	GGG	GGG	GGG	GGG
Sun of PFAS 6WA DER Lis17	hhh	0.01	µg/L	<0.01	GGG	GGG	GGG	GGG
EP239S: PFAS Surroga1e								
93C- GPFOS	hhh	0.02	%	) 0.(	GGG	GGG	GGG	GGG
93C8GPFOA	hhh	0.02	%	) 3.m	GGG	GGG	GGG	GGG

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4MW30(4230m0-	0- - m4MW3924230m0-	0- - m4MW30- 4230m0-	0- - m4MW3- 24230m0-	0- - m4MW3- 54230m0-
			Sampling date / time	05hMayh2023 1p:53	05hMayh2023 1p:59	05hMayh2023 18:00	05hMayh2023 18:0p	05hMayh2023 18:08
Compound	CAS Number	LOR	Unit	EM230809m0929	EM230809m092m	EM230809m092(	EM230809m0928	EM230809m092)
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	(5.m	0.02	0.03	0.3m	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	53.9	0.0-	<0.02	0.3(	<0.02
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	3(0	0.2-	0.20	2.2m	0.02
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	35.3	0.02	<0.02	0.99	<0.02
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	8-.9	0.92	0.9-	2.m5	0.02
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	90.0	<0.1	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	m0.2	<0.02	<0.02	0.0)	<0.02
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	922	0.0-	0.0-	0.3)	<0.02
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	22.3	<0.02	<0.02	0.03	<0.02
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	3m)	0.09	<0.02	0.08	<0.01
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	0.m0	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.09	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.02
NG1Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.09	<0.0+	<0.0+	<0.0+	<0.0+
NGE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.09	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7				Sample ID	0- - m4MW30(4230m0-	0- - m4MW3924230m0-	0- - m4MW30- 4230m0-	0- - m4MW3- 24230m0-	0- - m4MW3- 54230m0-
				Sampling date / time	05hMayh2023 1p:53	05hMayh2023 1p:59	05hMayh2023 18:00	05hMayh2023 18:0p	05hMayh2023 18:08
Compound	CAS Number	LOR	Unit		EM230809m0929	EM230809m092m	EM230809m092(	EM230809m0928	EM230809m092)
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued									
N0Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L		<0.09	<0.0+	<0.0+	<0.0+	<0.0+
N0E1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L		<0.09	<0.0+	<0.0+	<0.0+	<0.0+
N0Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h81h9	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N0E1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h+0h6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids									
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L		**0.m8**	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L		**82.8**	<0.0+	**0.0m**	<0.0+	<0.0+
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h85h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sun s									
Sun of PFAS	hhh	0.01	µg/L		**) m**	**0.-)**	**0.-5**	**5.23**	**0.0-**
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h1	0.01	µg/L		**- m**	**0.35**	**0.3-**	**-.89**	**0.0-**
Sun of PFAS 6WA DER Lis17	hhh	0.01	µg/L		**8m**	**0.-3**	**0.-5**	**m(m**	**0.0-**
EP239S: PFAS Surroga1e									
93C-GPFOS	hhh	0.02	%		**8(.8**	**) 2.)**	**58.-**	**) 0.0**	**903**
93C8GPFOA	hhh	0.02	%		**) 5.8**	**909**	**(9.2**	**) - .3**	**) m8**

Analytical Results

SubHMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4QC90m4230m0-	0- - m4MW0- 54D4230m 0m	0- - m4MW3- m4230m0m	0- - m4MW0924230m0m	0- - m4MW3m- 4230m0m
			Sampling date / time	05HMayH2023 18:12	0+HMayH2023 20:+0	0+HMayH2023 20:+1	0+HMayH2023 20:+2	0+HMayH2023 20:+5
Compound	CAS Number	LOR	Unit	EM230809m0032	EM230809m003(	EM230809m0038	EM230809m003)	EM230809m00- 0
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	**0.02**	**0.99**	**0.0m**	<0.02	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	<0.02	**0.9m**	**0.0-**	<0.02	<0.02
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**0.9-**	**9.9(**	**0.23**	**0.23**	**0.05**
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	**0.0(**	<0.02	<0.02	<0.02
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**0.90**	**9.5m**	**0.0)**	**0.08**	**0.08**
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	**0.0-**	<0.02	<0.02	<0.02
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	**0.02**	**0.98**	<0.02	<0.02	<0.02
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	<0.02	**0.0m**	<0.02	<0.01	<0.01
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1ridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7				Sample ID	0- - m4QC90m4230m0-	0- - m4MW0- 54D4230m 0m	0- - m4MW3- m4230m0m	0- - m4MW0924230m0m	0- - m4MW3m- 4230m0m
				Sampling date / time	05hMayh2023 18:12	0+hMayh2023 20:+0	0+hMayh2023 20:+1	0+hMayh2023 20:+2	0+hMayh2023 20:+5
Compound	CAS Number	LOR	Unit		EM230809mG32	EM230809mG3(	EM230809mG38	EM230809mG3)	EM230809mG- 0
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued									
NG3Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NGE1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NG3Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h31h9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
NGE1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h-0h6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids									
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h35h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sun s									
Sun of PFAS	hhh	0.01	µg/L		**0.28**	**3.- -**	**0.- 9**	**0.39**	**0.9-**
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h 1	0.01	µg/L		**0.2-**	**2.82**	**0.32**	**0.39**	**0.9-**
Sun of PFAS 6WA DER Lis17	hhh	0.01	µg/L		**0.28**	**3.22**	**0.3(**	**0.39**	**0.9-**
EP239S: PFAS Surroga1e									
93C- GPFOS	hhh	0.02	%		**80.-**	**903**	**8m8**	**88.m**	**) 9.2**
93C8GPFOA	hhh	0.02	%		**(5.2**	**) 5.8**	**85.-**	**)) .0**	**) m5**

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- -m4QC9054230m0m	0- -m4MW0m24230m0m	0- -m4MW3n044D4230 m0m	0- -m4MW0-34230m0m	0- -m4MW3n94230m0m
			Sampling date / time	0+HMayh2023 20:+6	0+HMayh2023 20:+p	0+HMayh2023 21:00	0+HMayh2023 21:02	0+HMayh2023 21:03
Compound	CAS Number	LOR	Unit	EM230809m0-9	EM230809m0-2	EM230809m0-3	EM230809m0--	EM230809m0-m
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	9.29	9.80	0.0-	0.(m	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	9.05	9.) 3	0.0-	0.(-	<0.02
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	(.3m	8.( )	0.2)	-.58	0.02
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	0.m-	0.-(	0.03	0.-0	<0.02
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	(.-9	90.(	0.--	m5)	0.03
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	0.0-	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	0.3	0.-	<0.1	0.9	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	0.-(	0.m-	<0.02	0.39	<0.02
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	9.58	2.) 2	0.0(	9.25	<0.02
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	0.3-	0.(2	<0.02	0.29	<0.02
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	0.m5	0.89	0.02	0.35	<0.01
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1ridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7				Sample ID	0- - m4QC9054230m0m	0- - m4MW0m24230m0m	0- - m4MW3n044D4230 m0m	0- - m4MW0- 34230m0m	0- - m4MW3n94230m0m
				Sampling date / time	0+HMayh2023 20:+6	0+HMayh2023 20:+p	0+HMayh2023 21:00	0+HMayh2023 21:02	0+HMayh2023 21:03
Compound	CAS Number	LOR	Unit		EM230809m0- 9	EM230809m0- 2	EM230809m0- 3	EM230809m0- -	EM230809m0- m
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued									
NG6Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NGE1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NG6Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h31h9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
NGE1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h-0h6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids									
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L		**0.2m**	<0.0+	<0.0+	**0.22**	<0.0+
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h35h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sun s									
Sun of PFAS	Hhh	0.01	µg/L		**29.2**	**2) .9**	**0.) 3**	**9- .(**	**0.0m**
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h 1	0.01	µg/L		**9- .8**	**9) .m**	**0.(3**	**90.-**	**0.0m**
Sun of PFAS 6WA DER Lis17	Hhh	0.01	µg/L		**9) .5**	**25.(**	**0.85**	**93.5**	**0.0m**
EP239S: PFAS Surroga1e									
93C- CPFOS	Hhh	0.02	%		**) 2.8**	**8(.(**	**) m)**	**8(.2**	**) 3.3**
93C8CPFOA	Hhh	0.02	%		**900**	**) m(**	**) 5.5**	**) 5.8**	**) 5.9**

Analytical Results

SubHMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4MW02) 4230n0m	0- - m4MW0- 54l4230m 0m	0- - m4MW3n84230n0m	0- - m4MW03- 4230n0m	0- - m4MW3n04S4230m 0m
			Sampling date / time	0+HMayh2023 21:05	0+HMayh2023 21:08	0+HMayh2023 21:10	0+HMayh2023 21:10	0+HMayh2023 21:12
Compound	CAS Number	LOR	Unit	EM230809m0- 5	EM230809m0- (	EM230809m0- 8	EM230809m0-)	EM230809m0n0
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	**0.92**	**0.92**	**9.3-**	**0.0m**	**2.80**
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	**0.93**	**0.9-**	**9.n0**	**0.05**	**-.92**
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**0.n(**	**9.90**	**5.(8**	**0.- 8**	**n3.3**
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	**0.0(**	**0.3m**	**0.0-**	**-.) -**
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**0.- 5**	**9.n-**	**3.28**	**9.02**	**- mm**
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	**0.2**	<0.1	**0.)**
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	**0.92**	**0.0-**	**0.3-**	<0.02	**2.n8**
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	**0.25**	**0.9)**	**9.n5**	**0.08**	**8.28**
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	**0.0(**	**0.02**	**0.2m**	<0.02	**9.mm**
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	**0.0-**	**0.0m**	**0.33**	**0.03**	**m20**
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.0m**
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1ridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4MW02) 4230n0m	0- - m4MW0- 54l4230m 0m	0- - m4MW3n84230n0m	0- - m4MW03- 4230n0m	0- - m4MW3n04S4230m 0m
			Sampling date / time	0+HMayh2023 21:05	0+HMayh2023 21:08	0+HMayh2023 21:10	0+HMayh2023 21:10	0+HMayh2023 21:12
Compound	CAS Number	LOR	Unit	EM230809m0- 5	EM230809m0- (	EM230809m0- 8	EM230809m0-)	EM230809m0n0
				Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued								
NGMe1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NGE1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NGMe1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h31h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
NGE1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h-0h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids								
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	9.) 9
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h35h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sun s								
Sun of PFAS	Hhh	0.01	µg/L	9.((	3.2(	9m)	9.(5	939
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h 1	0.01	µg/L	9.03	2.5-	90.9	9.n0	) 8.8
Sun of PFAS 6WA DER Lis17	Hhh	0.01	µg/L	9.5-	3.05	9- .9	9.55	922
EP239S: PFAS Surroga1e								
93C- GPFOS	Hhh	0.02	%	) 5.5	) 9.0	) - .9	) 0.2	85.3
93C8GPFOA	Hhh	0.02	%	) m(	) 8.m	) mm	) - .2	) 3.)

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4MW- 034230m0m	0- - m4MW0954230m0m	0- - m4MW0984230m0m	0- - m4MW00) 4230m0m	0- - m4MW0- 24230m0m
			Sampling date / time	0+hMayh2023 21:13	0+hMayh2023 21:1+	0+hMayh2023 21:16	0+hMayh2023 21:1p	0+hMayh2023 21:18
Compound	CAS Number	LOR	Unit	EM230809m0m9	EM230809m0m2	EM230809m0m8	EM230809m0m-	EM230809m0mm
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	**5.-(**	**0.23**	**0.0m**	**0.-8**	**9.0-**
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	**(.0-**	**0.22**	**0.0-**	**0.m8**	**9.00**
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**-2.-**	**9.m2**	**0.32**	**3.2m**	**5.-)**
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	**2.-2**	**0.92**	<0.02	**0.2m**	**0.m-**
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**38.9**	**2.38**	**0.3m**	**-.0(**	**(.92**
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	**9.-**	<0.1	<0.1	<0.1	**0.2**
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	**2.80**	**0.08**	<0.02	**0.9)**	**0.-0**
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	**90.3**	**0.38**	<0.02	**0.8(**	**9.(2**
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	**9.80**	**0.08**	<0.02	**0.9-**	**0.28**
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	**3.0-**	**0.9m**	<0.01	**0.2m**	**0.-8**
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	**0.0-**	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
NG1Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NGE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4MW- 034230m0m	0- - m4MW0954230m0m	0- - m4MW0984230m0m	0- - m4MW00) 4230m0m	0- - m4MW0- 24230m0m
			Sampling date / time	0+hMayh2023 21:13	0+hMayh2023 21:1+	0+hMayh2023 21:16	0+hMayh2023 21:1p	0+hMayh2023 21:18
Compound	CAS Number	LOR	Unit	EM230809m0m9	EM230809m0m2	EM230809m0m8	EM230809m0m-	EM230809m0mm
				Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued								
N0Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N0E1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N0Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h81h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N0E1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h+0h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids								
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L	0.m8	<0.0+	<0.0+	0.90	0.22
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h85h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sun s								
Sun of PFAS	Hhh	0.01	µg/L	995	m95	0.(5	90.9	9) .m
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h1	0.01	µg/L	80.m	3.) 0	0.5(	(.32	93.5
Sun of PFAS 6WA DER Lis17	Hhh	0.01	µg/L	90(	- .82	0.(2	) .3m	98.0
EP239S: PFAS Surroga1e								
93C- GPFOS	Hhh	0.02	%	) (.2	88.(	) 3.5	) 5.3	)) .0
93C8GPFOA	Hhh	0.02	%	) 5.9	) 2.2	) - .(	) mm	) 5.5

Analytical Results

SubHMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4MW03m4230m0m	0- - m4MW3m24230m0m	0- - m4QC90) 4230m0m	0- - m4QC90(4230m0m	0- - m4MW- 954230m05
			Sampling date / time	0+HMayH2023 21:19	0+HMayH2023 21:19	0+HMayH2023 21:3p	0+HMayH2023 21:38	06HMayH2023 13:38
Compound	CAS Number	LOR	Unit	EM230809m0m5	EM230809m0m(	EM230809m05(	EM230809m058	EM230809m0(2
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	9.0(	<0.02	0.0m	<0.02	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	9.2(	<0.02	0.05	<0.02	<0.02
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	(.02	<0.01	0.-8	0.02	<0.01
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	0.m5	<0.02	0.03	<0.02	<0.02
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	(.55	0.02	0.)(	0.02	<0.01
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	0.2	<0.1	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	0.- -	<0.02	<0.02	<0.02	<0.02
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	9.88	<0.02	0.08	<0.02	<0.02
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	0.30	<0.02	<0.02	<0.02	<0.02
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	0.m0	<0.01	0.03	<0.01	<0.01
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
NG1Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NGE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7				Sample ID	0- - m4MW03m4230n0m	0- - m4MW3m24230n0m	0- - m4QC90) 4230n0m	0- - m4QC90(4230n0m	0- - m4MW- 954230n05
				Sampling date / time	0+hMayh2023 21:19	0+hMayh2023 21:19	0+hMayh2023 21:3p	0+hMayh2023 21:38	06hMayh2023 13:38
Compound	CAS Number	LOR	Unit		EM230809m0n5	EM230809m0m(	EM230809m05(	EM230809m0958	EM230809m0(2
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued									
N0Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+	
N0E1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+	
N0Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h81h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
N0E1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h+0h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids									
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+	
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L	**0.29**	<0.0+	<0.0+	<0.0+	<0.0+	
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h85h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+	
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+	
EP239P: PFAS Sun s									
Sun of PFAS	hhh	0.01	µg/L	**29.9**	**0.02**	**9.(0**	**0.0-**	<0.01	
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h 1	0.01	µg/L	**9- .(**	**0.02**	**9.- m**	**0.0-**	<0.01	
Sun of PFAS 6WA DER Lis17	hhh	0.01	µg/L	**9) .3**	**0.02**	**9.59**	**0.0-**	<0.01	
EP239S: PFAS Surroga1e									
93C- GPFOS	hhh	0.02	%	**) 0.9**	**) 3.8**	**8(.3**	**) 2.5**	**) 8.)**	
93C8GPFOA	hhh	0.02	%	**) m)**	**) - .)**	**) - .m**	**) 2.3**	**) 2.-**	

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4MW- 0- 4230n0m	0- - m4MW0204230m05	[illegible]	[illegible]	[illegible]
			Sampling date / time	0+hMayh2023 13:51	06hMayh2023 15:2+	hhh	hhh	hhh
Compound	CAS Number	LOR	Unit	EM230809m0(-	EM230809m0989	[illegible]	[illegible]	[illegible]
				Result	Result	hhh	hhh	hhh
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	9) .m	0.08	[illegible]	[illegible]	[illegible]
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	98.2	0.90	[illegible]	[illegible]	[illegible]
Perfluorohexat e sulfot ic acid 6PF_ xS7	3++h56h5	0.01	µg/L	902	9.90	[illegible]	[illegible]	[illegible]
Perfluorohep1at e sulfot ic acid 6PF_ pS7	3p+h92h8	0.02	µg/L	5.(9	0.05	[illegible]	[illegible]	[illegible]
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	) 5.-	0.) 3	[illegible]	[illegible]	[illegible]
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.03	<0.02	[illegible]	[illegible]	[illegible]
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	2.5	<0.1	[illegible]	[illegible]	[illegible]
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	5.93	0.03	[illegible]	[illegible]	[illegible]
Perfluorohexat oic acid 6PF_ xA7	30ph25h5	0.02	µg/L	39.2	0.93	[illegible]	[illegible]	[illegible]
Perfluorohep1at oic acid 6PF_ pA7	3p+h8+h9	0.02	µg/L	(.0-	<0.02	[illegible]	[illegible]	[illegible]
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	92.2	0.0-	[illegible]	[illegible]	[illegible]
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	0.0m	<0.02	[illegible]	[illegible]	[illegible]
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.03	<0.02	[illegible]	[illegible]	[illegible]
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.03	<0.02	[illegible]	[illegible]	[illegible]
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.03	<0.02	[illegible]	[illegible]	[illegible]
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.03	<0.02	[illegible]	[illegible]	[illegible]
Perfluoro1e1tradecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.09	<0.0+	[illegible]	[illegible]	[illegible]
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.03	<0.02	[illegible]	[illegible]	[illegible]
NGMe1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.09	<0.0+	[illegible]	[illegible]	[illegible]
NGE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.09	<0.0+	[illegible]	[illegible]	[illegible]

Analytical Results

SubMatrix: HROUNDWATER 6Matrix: WATER7			Sample ID	0- - m4MW- 0- 4230n0m	0- - m4MW0204230m05	[illegible]	[illegible]	[illegible]
			Sampling date / time	0+hMayh2023 13:51	06hMayh2023 15:2+	hhh	hhh	hhh
Compound	CAS Number	LOR	Unit	EM230809m0(-	EM230809m0989	[illegible]	[illegible]	[illegible]
				Result	Result	hhh	hhh	hhh
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued								
N0Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L	<0.09	<0.0+	[illegible]	[illegible]	[illegible]
N0E1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L	<0.09	<0.0+	[illegible]	[illegible]	[illegible]
N0Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h81h9	0.02	µg/L	<0.03	<0.02	[illegible]	[illegible]	[illegible]
N0E1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h+0h6	0.02	µg/L	<0.03	<0.02	[illegible]	[illegible]	[illegible]
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids								
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L	<0.0+	<0.0+	[illegible]	[illegible]	[illegible]
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L	**0.92**	<0.0+	[illegible]	[illegible]	[illegible]
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h85h5	0.0+	µg/L	<0.0+	<0.0+	[illegible]	[illegible]	[illegible]
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L	<0.0+	<0.0+	[illegible]	[illegible]	[illegible]
EP239P: PFAS Sun s								
Sun of PFAS	hhh	0.01	µg/L	**302**	**2.-(**	[illegible]	[illegible]	[illegible]
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h1	0.01	µg/L	**9)8**	**2.03**	[illegible]	[illegible]	[illegible]
Sun of PFAS 6WA DER Lis17	hhh	0.01	µg/L	**2((**	**2.39**	[illegible]	[illegible]	[illegible]
EP239S: PFAS Surroga1e								
93C- GPFOS	hhh	0.02	%	**902**	**)9.-**	[illegible]	[illegible]	[illegible]
93C8GPFOA	hhh	0.02	%	**8).3**	**)m0**	[illegible]	[illegible]	[illegible]

Analytical Results

SubMatrix: SEDIMENT 6Matrix: SOIL7			Sample ID	0- - m4SD3234230m0-	0- - m4SD3- 54230m0m	0- - m4SD3(m4230m0m	0- - m4SD3824230m0m	0- - m4QC9084230m0m
			Sampling date / time	05hMayh2023 18:15	0+hMayh2023 20:55	0+hMayh2023 20:5+	0+hMayh2023 21:25	0+hMayh2023 21:25
Compound	CAS Number	LOR	Unit	EM230809m03-	EM230809m03m	EM230809m035	EM230809m0m8	EM230809m0m)
				Result	Result	Result	Result	Result
EA0mm Mois1ure Cot 1et 16Dried @ 90m0990°C7								
Mois1ure Cot 1et 1	Hhh	0.1	%	**28.0**	**2) .2**	**2) .(**	**22.(**	**29.8**
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.0002	mg/kg	**0.0008**	**0.000m**	<0.0002	<0.0002	<0.0002
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.0002	mg/kg	**0.092)**	**0.090)**	**0.0032**	<0.0002	<0.0002
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph8	0.0002	mg/kg	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoro1ridecat oic acid 6PFTrDA7	p2629h95h8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.000+	mg/kg	<0.000+	<0.000+	<0.000+	<0.000+	<0.000+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.000+	mg/kg	<0.000+	<0.000+	<0.000+	<0.000+	<0.000+

Analytical Results

SubMatrix: SEDIMENT 6Matrix: SOIL7				Sample ID	0- - m4SD3234230m0-	0- - m4SD3- 54230m0m	0- - m4SD3(m4230m0m	0- - m4SD3824230m0m	0- - m4QC9084230m0m
				Sampling date / time	05hMayh2023 18:15	0+hMayh2023 20:55	0+hMayh2023 20:5+	0+hMayh2023 21:25	0+hMayh2023 21:25
Compound	CAS Number	LOR	Unit		EM230809m093-	EM230809m093m	EM230809m0935	EM230809m09m8	EM230809m09m)
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued									
NGE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.000+	mg/kg		<0.000+	<0.000+	<0.000+	<0.000+	<0.000+
NG9e1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.000+	mg/kg		<0.000+	<0.000+	<0.000+	<0.000+	<0.000+
NGE1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.000+	mg/kg		<0.000+	<0.000+	<0.000+	<0.000+	<0.000+
NG9e1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h81h9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
NGE1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h+0h6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids									
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.000+	mg/kg		<0.000+	<0.000+	<0.000+	<0.000+	<0.000+
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.000+	mg/kg		<0.000+	<0.000+	<0.000+	<0.000+	<0.000+
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h85h5	0.000+	mg/kg		<0.000+	<0.000+	<0.000+	<0.000+	<0.000+
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.000+	mg/kg		<0.000+	<0.000+	<0.000+	<0.000+	<0.000+
EP239P: PFAS Sun s									
Sun of PFAS	Hhh	0.0002	mg/kg		**0.09-0**	**0.099-**	**0.0032**	<0.0002	<0.0002
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h1	0.0002	mg/kg		**0.093(**	**0.099-**	**0.0032**	<0.0002	<0.0002
Sun of PFAS 6WA DER Lis17	Hhh	0.0002	mg/kg		**0.093(**	**0.099-**	**0.0032**	<0.0002	<0.0002
EP239S: PFAS Surroga1e									
93C-GPFOS	Hhh	0.0002	%		**999**	**908**	**83.0**	**)m8**	**909**
93C8GPFOA	Hhh	0.0002	%		**)0.8**	**88.2**	**)9.2**	**)0.8**	**900**

Analytical Results

SubMatrix: SEDIMENT Matrix: SOIL			Sample ID					
			Sampling date / time					
Compound	CAS Number	LOR	Unit	EM230809	EM230809			
				Result	Result			
EA0 Moisture Content Dried @ 90 C								
Moisture Content		0.1	%					
EP239A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid PFBS		0.0002	mg/kg	<0.0002	<0.0002			
Perfluoropentane sulfonic acid PFPeS		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorohexane sulfonic acid PFHxS		0.0002	mg/kg	<0.0002	<0.0002			
Perfluoroheptane sulfonic acid PFHpS		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorooctane sulfonic acid PFOS		0.0002	mg/kg	**0.0029**	**0.0099**			
Perfluorodecane sulfonic acid PFDS		0.0002	mg/kg	<0.0002	<0.0002			
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid PFBA		0.001	mg/kg	<0.001	<0.001			
Perfluoropentanoic acid PFPeA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorohexanoic acid PFHxA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluoroheptanoic acid PFHpA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorooctanoic acid PFOA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorononanoic acid PFNA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorodecanoic acid PFDA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluoroundecanoic acid PFUnDA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorododecanoic acid PFDoDA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorotridecanoic acid PFTrDA		0.0002	mg/kg	<0.0002	<0.0002			
Perfluorotetradecanoic acid PFTeDA		0.000+	mg/kg	<0.000+	<0.000+			
EP239C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide FOSA		0.0002	mg/kg	<0.0002	<0.0002			
N-Methyl perfluorooctane sulfonamide MeFOSA		0.000+	mg/kg	<0.000+	<0.000+			

Analytical Results

SubMatrix: SEDIMENT 6Matrix: SOIL7			Sample ID	0- - m4QC9904230m0m	0- - m4SD3mm4230m0-	[illegible]	[illegible]	[illegible]
			Sampling date / time	0+hMayh2023 21:2+	05hMayh2023 18:1+	hhh	hhh	hhh
Compound	CAS Number	LOR	Unit	EM230809m0950	EM230809m0938-	[illegible]	[illegible]	[illegible]
				Result	Result	hhh	hhh	hhh
EP239C: Perfluoroalkyl Sulfonamides (Continued)								
N-Ethyl perfluorooctane sulfonamide (N-EtFOSA)	4151-50-2	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
N-Methyl perfluorooctane sulfonamidoethanol (N-MeFOSE)	24448-09-7	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
N-Ethyl perfluorooctane sulfonamidoethanol (N-EtFOSE)	1691-99-2	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
EP239D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
5:2 Fluorotelomer sulfonic acid (5:2 FTS)	27619-97-2	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0002	mg/kg	<0.0002	<0.0002	[illegible]	[illegible]	[illegible]
EP239P: PFAS Sums								
Sum of PFAS	hhh	0.0002	mg/kg	**0.0029**	**0.0099**	[illegible]	[illegible]	[illegible]
Sum of PFAS (WA DER List 1)	3++h56h5/1p63h23h1	0.0002	mg/kg	**0.0029**	**0.0099**	[illegible]	[illegible]	[illegible]
Sum of PFAS (WA DER List 2)	hhh	0.0002	mg/kg	**0.0029**	**0.0099**	[illegible]	[illegible]	[illegible]
EP239S: PFAS Surrogates								
13C4-PFOS	hhh	0.0002	%	**90m**	**902**	[illegible]	[illegible]	[illegible]
13C8-PFOA	hhh	0.0002	%	**) 5.2**	**) 5.5**	[illegible]	[illegible]	[illegible]

Analytical Results

SubMatrix: SURFACE WATER 6Matrix: WATER7			Sample ID	0- - m4SW3294230m09	0- - m4SW3934230m09	0- - m4SW3254230m09	0- - m4QC9004230m09	0- - m4SW32- 4230m09
			Sampling date / time	01hMayh2023 1+:26	01hMayh2023 1+:28	01hMayh2023 1+:30	01hMayh2023 1+:31	01hMayh2023 1+:55
Compound	CAS Number	LOR	Unit	EM230809m0909	EM230809m0902	EM230809m0903	EM230809m0900-	EM230809m0900m
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	**0.0-**	**0.9-**	**0.02**	**0.0-**	**0.0(**
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	**0.0m**	**0.92**	<0.02	**0.0m**	**0.05**
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**0.(0**	**9.- 3**	**0.9(**	**0.5)**	**0.55**
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	**0.0m**	**0.03**	<0.02	**0.0m**	**0.03**
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**3.) (**	**9.) 0**	**9.20**	**- .28**	**9.80**
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	**0.9**	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	**0.- 9**	**0.0-**	<0.02	**0.92**
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	**0.08**	**0.m)**	**0.05**	**0.08**	**0.98**
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	**0.90**	**0.02**	<0.02	**0.05**
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	**0.03**	**0.9-**	**0.0-**	**0.03**	**0.0)**
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	**0.08**	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1tradecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: SURFACE WATER Matrix: WATER				Sample ID	0--m4SW3294230m09	0--m4SW3934230m09	0--m4SW3254230m09	0--m4QC9004230m09	0--m4SW32-4230m09
				Sampling date / time	01hMayh2023 1+:26	01hMayh2023 1+:28	01hMayh2023 1+:30	01hMayh2023 1+:31	01hMayh2023 1+:55
Compound	CAS Number	LOR	Unit		EM230809m0909	EM230809m0902	EM230809m0903	EM230809m0900	EM230809m0900m
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfonamides (Continued)									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448h09hp	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691h99h2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	23++h81h9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991h+0h6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p+p125hp2h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluorotelomer sulfonic acid (5:2 FTS)	2p619h9ph2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108h85h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226h60h0	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sums									
Sum of PFAS	hhh	0.01	µg/L		-.)2	m0-	9.nm	m22	3.0(
Sum of PFAS and PFOS	3++h56h5/1p63h23h1	0.01	µg/L		-.5(	3.33	9.3(	-.)(	2.-5
Sum of PFAS (WA DER List)	hhh	0.01	µg/L		-.82	-.89	9.nm	m92	2.)8
EP239S: PFAS Surrogates									
13C-PFOS	hhh	0.02	%		).3.m	85.-	).2.0	902	).9.-
13C8-PFOA	hhh	0.02	%		).8.2	).5.(	).8.9	)(.-	)(.2

Analytical Results

SubMatrix: SURFACE WATER 6Matrix: WATER7			Sample ID	0- - m4QC3004230m09	0- - m4QC9094230m09	0- - m4SW3-) 4230m02	0- - m4SW3384230m02	0- - m4SW3- 04230m02
			Sampling date / time	01hMayh2023 1+:5+	01hMayh2023 1+:5p	02hMayh2023 1p:30	02hMayh2023 1p:32	02hMayh2023 1p:3p
Compound	CAS Number	LOR	Unit	EM230809m0905	EM230809m090(	EM230809m0908	EM230809m090)	EM230809m0990
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	<0.02	**0.0(**	**0.03**	**0.03**	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	<0.02	**0.0m**	<0.02	**0.02**	**0.03**
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	<0.01	**0.5-**	**0.93**	**0.98**	**0.30**
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	**0.02**
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	<0.01	**9.80**	**0.-5**	**0.n8**	**9.20**
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	**0.92**	**0.03**	**0.03**	**0.03**
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	<0.02	**0.98**	**0.0-**	**0.90**	**0.08**
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	**0.0m**	<0.02	<0.02	**0.0(**
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	<0.01	**0.0)**	**0.02**	**0.03**	**0.0)**
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	**0.03**
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: SURFACE WATER 6Matrix: WATER7				Sample ID	0- -m4QC3004230m09	0- -m4QC9094230m09	0- -m4SW3-) 4230m02	0- -m4SW3384230m02	0- -m4SW3- 04230m02
				Sampling date / time	01hMayh2023 1+:5+	01hMayh2023 1+:5p	02hMayh2023 1p:30	02hMayh2023 1p:32	02hMayh2023 1p:3p
Compound	CAS Number	LOR	Unit		EM230809m0905	EM230809m090(	EM230809m0908	EM230809m0900)	EM230809m0990
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued									
N0Me1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N0E1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N0Me1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h81h9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N0E1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h+0h6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids									
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h85h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sun s									
Sun of PFAS	Hhh	0.01	µg/L		<0.01	**3.0-**	**0.(9**	**0.) 2**	**9.8m**
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h 1	0.01	µg/L		<0.01	**2.- -**	**0.m)**	**0.(9**	**9.m0**
Sun of PFAS 6WA DER Lis17	Hhh	0.01	µg/L		<0.01	**2.) m**	**0.(9**	**0.) 0**	**9.((**
EP239S: PFAS Surroga1e									
93C- GPFOS	Hhh	0.02	%		**) mm**	**8(.-**	**) m8**	**) 3.9**	**) 2.0**
93C8GPFOA	Hhh	0.02	%		**909**	**) m3**	**) 8.(**	**) (.3**	**) (.2**

Analytical Results

SubMatrix: SURFACE WATER 6Matrix: WATER7			Sample ID	0- - m4QC9024230m02	0- - m4SW3324230m03	0- - m4SW- - 84230m03	0- - m4SW3904230m03	0- - m4SW3954230m03
			Sampling date / time	02hMayh2023 1p:50	03hMayh2023 19:+3	03hMayh2023 19:+5	03hMayh2023 19:++	03hMayh2023 19:+6
Compound	CAS Number	LOR	Unit	EM230809m0992	EM230809m0993	EM230809m099-	EM230809m099m	EM230809m0995
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	**0.03**	<0.02	**0.0-**	<0.02	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	**0.03**	<0.02	**0.03**	<0.02	<0.02
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**0.20**	<0.01	**0.n8**	**0.03**	**0.0(**
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**0.nn**	**0.09**	**9.23**	**0.0)**	**0.99**
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	**0.03**	<0.02	**0.0-**	<0.02	<0.02
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	**0.99**	<0.02	**0.0)**	<0.02	<0.02
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	**0.03**	<0.01	**0.03**	<0.01	<0.01
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: SURFACE WATER Matrix: WATER				Sample ID	0- - m4QC9024230m02	0- - m4SW3324230m03	0- - m4SW- - 84230m03	0- - m4SW3904230m03	0- - m4SW3954230m03
				Sampling date / time	02hMayh2023 1p:50	03hMayh2023 19:+3	03hMayh2023 19:+5	03hMayh2023 19:++	03hMayh2023 19:+6
Compound	CAS Number	LOR	Unit		EM230809m0992	EM230809m0993	EM230809m09-	EM230809m099m	EM230809m0995
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfonamides (Continued)									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP239P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.018**	**0.09**	**2.04**	**0.92**	**0.98**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.018**	**0.09**	**2.04**	**0.92**	**0.98**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.018**	**0.09**	**2.09**	**0.92**	**0.98**
EP239S: PFAS Surrogates									
13C4-PFOS	----	0.02	%		**119.5**	**88.9**	**84.2**	**110.9**	**119.3**
13C8-PFOA	----	0.02	%		**119.3**	**118.3**	**112.2**	**115.5**	**119.4**

Analytical Results

SubMatrix: SURFACE WATER 6Matrix: WATER7			Sample ID	0- - m4QC9034230m03	0- - m4QC3034230m03	0- - m4QC90- 4230m03	0- - m4SW3224230m0-	0- - m4SW3354230m0-
			Sampling date / time	03hMayh2023 19:+p	03hMayh2023 19:+8	03hMayh2023 19:+9	05hMayh2023 1p:50	05hMayh2023 1p:55
Compound	CAS Number	LOR	Unit	EM230809m099(	EM230809m0998	EM230809m099)	EM230809m0920	EM230809m0922
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	**0.02**	<0.02	**0.0-**	**0.0-**	**0.90**
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	<0.02	<0.02	**0.03**	**0.0-**	**0.9)**
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**0.08**	<0.01	**0.50**	**0.58**	**9.9m**
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	<0.02	**0.02**	**0.0-**	**0.0(**
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**0.99**	<0.01	**9.28**	**3.93**	**-.(8**
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.90**
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	**0.2**
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	<0.02	**0.0-**	<0.02	**0.3m**
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	<0.02	<0.02	**0.0)**	**0.05**	**0.) 3**
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.39**
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	<0.01	<0.01	**0.03**	**0.02**	**0.m(**
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.29**
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.99**
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.0m**
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1tradecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.03**
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0--m4QC9034230m03	0--m4QC3034230m03	0--m4QC90-4230m03	0--m4SW3224230m0-	0--m4SW3354230m0-
			Sampling date / time	03hMayh2023 19:+p	03hMayh2023 19:+8	03hMayh2023 19:+9	05hMayh2023 1p:50	05hMayh2023 1p:55
Compound	CAS Number	LOR	Unit	EM230809m099(	EM230809m0998	EM230809m099)	EM230809m0920	EM230809m0922
				Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfonamides (Continued)								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24558h09hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691h99h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	23++h81h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991h+0h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p+p125hp2h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluorotelomer sulfonic acid (5:2 FTS)	2p619h9ph2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	9.28
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108h85h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	0.((
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226h60h0	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	0.95
EP239P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	0.29	<0.01	2.93	-.09	99.-
Sum of PFAS (WA DER List)	3++h56h5/1p63h23h1	0.01	µg/L	0.9)	<0.01	9.88	3.89	m) 3
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.29	<0.01	2.08	3.) 3	90.-
EP239S: PFAS Surrogates								
13C4-PFOS	----	0.02	%	)).)	) 9.9	) 0.8	) 3.5	83.2
13C8-PFOA	----	0.02	%	) 5.)	) 5.2	) 8.)	) (.-	) 2.)

Analytical Results

SubMatrix: SURFACE WATER 6Matrix: WATER7			Sample ID	0- - m4SW3nm4230m0-	0- - m4SW3234230m0-	0- - m4SW3334230m03	0- - m4QC30m4230m0-	0- - m4QC3094230m02
			Sampling date / time	05hMayh2023 1p:5+	05hMayh2023 1p:58	03hMayh2023 1p:+2	05hMayh2023 18:11	05hMayh2023 18:13
Compound	CAS Number	LOR	Unit	EM230809m0923	EM230809m092-	EM230809m0925	EM230809m0939	EM230809m0933
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	<0.02	**0.03**	<0.02	<0.02	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**0.0-**	**0.23**	**0.0-**	<0.01	<0.01
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**0.93**	**0.53**	**0.92**	<0.01	<0.01
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	**0.03**	<0.02	<0.02	<0.02
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	<0.02	**0.05**	<0.02	<0.02	<0.02
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	<0.01	**0.02**	<0.01	<0.01	<0.01
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

SubMatrix: SURFACE WATER Matrix: WATER				Sample ID	0--m4SW3mm4230m0-	0--m4SW3234230m0-	0--m4SW3334230m03	0--m4QC30m4230m0-	0--m4QC3094230m02
				Sampling date / time	05hMayh2023 1p:5+	05hMayh2023 1p:58	03hMayh2023 1p:+2	05hMayh2023 18:11	05hMayh2023 18:13
Compound	CAS Number	LOR	Unit		EM230809m0923	EM230809m092-	EM230809m0925	EM230809m0939	EM230809m0933
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfonamides (Continued)									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP239P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.9(**	**9.02**	**0.95**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.9(**	**0.85**	**0.95**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.9(**	**9.00**	**0.95**	<0.01	<0.01
EP239S: PFAS Surrogates									
13C-PFOS	----	0.02	%		**) 0.3**	**8(.3**	**) 8.9**	**) 2.0**	**) 9.3**
13C8-PFOA	----	0.02	%		**) 8.)**	**) (.)**	**) 8.3**	**) 5.5**	**909**

Analytical Results

SubMatrix: SURFACE WATER 6Matrix: WATER7			Sample ID	0- - m4SW3(- 4230m0m	0- - m4SW3- 54230m0m	0- - m4SW3(m4230m0m	0- - m4SW3824230m0m	0- - m4QC30(4230m0m
			Sampling date / time	0+hMayh2023 21:29	0+hMayh2023 21:30	0+hMayh2023 21:31	0+hMayh2023 21:32	0+hMayh2023 21:36
Compound	CAS Number	LOR	Unit	EM230809m0952	EM230809m0953	EM230809m095-	EM230809m095m	EM230809m0955
				Result	Result	Result	Result	Result
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	<0.02	**0.03**	<0.02	<0.02	<0.02
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**0.02**	**0.95**	**0.02**	<0.01	<0.01
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**0.08**	**0.5(**	**0.0m**	<0.01	<0.01
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	**0.0m**	<0.02	<0.02	<0.02
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	<0.02	**0.05**	<0.02	<0.02	<0.02
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	<0.01	**0.03**	<0.01	<0.01	<0.01
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
NG1Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
NGE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	<0.0+

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0--m4SW3(--4230m0m	0--m4SW3-54230m0m	0--m4SW3(m4230m0m	0--m4SW3824230m0m	0--m4QC30(4230m0m
				Sampling date / time	0+hMayh2023 21:29	0+hMayh2023 21:30	0+hMayh2023 21:31	0+hMayh2023 21:32	0+hMayh2023 21:36
Compound	CAS Number	LOR	Unit		EM230809m0952	EM230809m0953	EM230809m095-	EM230809m095m	EM230809m0955
					Result	Result	Result	Result	Result
EP239C: Perfluoroalkyl Sulfonamides (Continued)									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	25558h09hp	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691h99h2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	23++h81h9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991h+0h6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP239D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p+p125hp2h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
5:2 Fluorotelomer sulfonic acid (5:2 FTS)	2p619h9ph2	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108h85h5	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226h60h0	0.0+	µg/L		<0.0+	<0.0+	<0.0+	<0.0+	<0.0+
EP239P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.90**	**9.0-**	**0.0(**	<0.01	<0.01
Sum of PFAS excluded from PFOS	3++h56h5/1p63h23h1	0.01	µg/L		**0.90**	**0.83**	**0.0(**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.90**	**9.02**	**0.0(**	<0.01	<0.01
EP239S: PFAS Surrogates									
13C-PFOS	----	0.02	%		**)(.-**	**)0.3**	**)m5**	**8m8**	**)2.)**
13C8-PFOA	----	0.02	%		**)m8**	**)3.m**	**)5.3**	**)m(**	**)-.3**

Analytical Results

SubMatrix: SURFACE WATER 6Matrix: WATER7			Sample ID	0- - m4SW3994230m05	0- - m4SW3804230m05	0- - m4SW38(4230m05	0- - m4SW3(04230m0-	GGG
			Sampling date / time	06hMayh2023 13:50	06hMayh2023 13:+0	06hMayh2023 10:+8	05hMayh2023 18:03	hhh
Compound	CAS Number	LOR	Unit	EM230809m0(3	EM230809m0(m	EM230809m0982	EM230809m0983	GGGGG
				Result	Result	Result	Result	hhh
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**0.02**	**0.09**	<0.01	**0.03**	GGG
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**0.98**	**0.90**	<0.01	**0.0)**	GGG
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	GGG
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluorooc1at oic acid 6PFOA7	33+h6ph1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	GGG
Perfluorot ot at oic acid 6PFNA7	3p+h9+h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluorododecat oic acid 6PFDoDA7	30ph++h1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluoro1tridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	GGG
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	GGG
N6Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	GGG
N6E1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	GGG

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0--m4SW3994230m05	0--m4SW3804230m05	0--m4SW38(4230m05	0--m4SW3(04230m0-	[illegible]
			Sampling date / time	06h May h2023 13:50	06h May h2023 13:+0	06h May h2023 10:+8	05h May h2023 18:03	hhh
Compound	CAS Number	LOR	Unit	EM230809m0(3	EM230809m0(m	EM230809m0982	EM230809m0983	[illegible]
				Result	Result	Result	Result	hhh
EP239C: Perfluoroalkyl Sulfonamides (Continued)								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	25558h09hp	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	[illegible]
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691h99h2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	[illegible]
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	23++h81h9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	[illegible]
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991h+0h6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	[illegible]
EP239D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	p+p125hp2h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	[illegible]
5:2 Fluorotelomer sulfonic acid (5:2 FTS)	2p619h9ph2	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	[illegible]
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108h85h5	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	[illegible]
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226h60h0	0.0+	µg/L	<0.0+	<0.0+	<0.0+	<0.0+	[illegible]
EP239P: PFAS Sums								
Sum of PFAS	hhh	0.01	µg/L	**0.20**	**0.99**	<0.01	**0.92**	[illegible]
Sum of PFAS and PFOS	3++h56h5/1p63h23h1	0.01	µg/L	**0.20**	**0.99**	<0.01	**0.92**	[illegible]
Sum of PFAS (WA DER List)	hhh	0.01	µg/L	**0.20**	**0.99**	<0.01	**0.92**	[illegible]
EP239S: PFAS Surrogates								
13C4-PFOS	hhh	0.02	%	**8).(**	**).3**	**).2.m**	**909**	[illegible]
13C8-PFOA	hhh	0.02	%	**8).-**	**).3**	**).2**	**).3**	[illegible]

Analytical Results

SubMatrix: WASTEWATER 6Matrix: WATER7			Sample ID	0- - m4WWDRUM4230m 05	[illegible]	[illegible]	[illegible]	[illegible]
			Sampling date / time	06hMayh2023 13:38	hhh	hhh	hhh	hhh
Compound	CAS Number	LOR	Unit	EM230809m9(9	[illegible]	[illegible]	[illegible]	[illegible]
				Result	hhh	hhh	hhh	hhh
EP239A: Perfluoroalkyl Sulfot ic Acids								
Perfluorobu1at e sulfot ic acid 6PFBS7	3p+hp3h+	0.02	µg/L	**2.92**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluoropet 1at e sulfot ic acid 6PFPeS7	2p06h91h5	0.02	µg/L	**2.93**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorohexat e sulfot ic acid 6PF_xS7	3++h56h5	0.01	µg/L	**99.8**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorohep1at e sulfot ic acid 6PF_pS7	3p+h92h8	0.02	µg/L	**0.))**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorooc1at e sulfot ic acid 6PFOS7	1p63h23h1	0.01	µg/L	**(.) 5**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorodecat e sulfot ic acid 6PFDS7	33+hpph3	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
EP239B: Perfluoroalkyl Carboxylic Acids								
Perfluorobu1at oic acid 6PFBA7	3p+h22h5	0.1	µg/L	<0.1	[illegible]	[illegible]	[illegible]	[illegible]
Perfluoropet 1at oic acid 6PFPeA7	2p06h90h3	0.02	µg/L	**9.90**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorohexat oic acid 6PF_xA7	30ph25h5	0.02	µg/L	**2.) 2**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorohep1at oic acid 6PF_pA7	3p+h8+h9	0.02	µg/L	**0.n5**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorooc1at oic acid 6PFOA7	33+h6phl	0.01	µg/L	**0.) 0**	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorot ot at oic acid 6PFNA7	3p+h9+hl	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorodecat oic acid 6PFDA7	33+hp6h2	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorout decat oic acid 6PFUt DA7	20+8h95h8	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluorododecat oic acid 6PFDoDA7	30ph++hl	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluoro1ridecat oic acid 6PFTrDA7	p2629h95h8	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
Perfluoro1e1radecat oic acid 6PFTeDA7	3p6h06hp	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
EP239C: Perfluoroalkyl Sulfot an ides								
Perfluorooc1at e sulfot an ide 6FOSA7	p+5h91h6	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
NG1Me1hyl perfluorooc1at e sulfot an ide 6MeFOSA7	31+06h82h8	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
NGE1hyl perfluorooc1at e sulfot an ide 6E1FOSA7	51+1h+0h2	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]

Analytical Results

SubMatrix: WASTEWATER 6Matrix: WATER7			Sample ID	0- - m4WWDRUM4230m 05	[illegible]	[illegible]	[illegible]	[illegible]
			Sampling date / time	06hMayh2023 13:38	hthh	hthh	hthh	hthh
Compound	CAS Number	LOR	Unit	EM230809m9(9	[illegible]	[illegible]	[illegible]	[illegible]
				Result	hthh	hthh	hthh	hthh
EP239C: Perfluoroalkyl Sulfot an ides GCot 1t ued								
NGMe1hyl perfluorooc1at e sulfot an idoe1hat ol 6MeFOSE7	25558h09hp	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
NGE1hyl perfluorooc1at e sulfot an idoe1hat ol 6E1FOSE7	1691h99h2	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
NGMe1hyl perfluorooc1at e sulfot an idoace1ic acid 6MeFOSAA7	23++h31h9	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
NGE1hyl perfluorooc1at e sulfot an idoace1ic acid 6E1FOSAA7	2991h-0h6	0.02	µg/L	<0.02	[illegible]	[illegible]	[illegible]	[illegible]
EP239D: 6t :27Fluoro1elon er Sulfot ic Acids								
- :2 Fluoro1elon er sulfot ic acid 6- :2 FTS7	p+p125hp2h5	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
5:2 Fluoro1elon er sulfot ic acid 65:2 FTS7	2p619h9ph2	0.0+	µg/L	0.(8	[illegible]	[illegible]	[illegible]	[illegible]
8:2 Fluoro1elon er sulfot ic acid 68:2 FTS7	39108h35h5	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
90:2 Fluoro1elon er sulfot ic acid 690:2 FTS7	120226h60h0	0.0+	µg/L	<0.0+	[illegible]	[illegible]	[illegible]	[illegible]
EP239P: PFAS Sun s								
Sun of PFAS	hthh	0.01	µg/L	39.3	[illegible]	[illegible]	[illegible]	[illegible]
Sun of PF_xS at d PFOS	3++h56h5/1p63h23h 1	0.01	µg/L	9) .8	[illegible]	[illegible]	[illegible]	[illegible]
Sun of PFAS 6WA DER Lis17	hthh	0.01	µg/L	28.9	[illegible]	[illegible]	[illegible]	[illegible]
EP239S: PFAS Surroga1e								
93C- CPFOS	hthh	0.02	%	) 8.m	[illegible]	[illegible]	[illegible]	[illegible]
93C8CPFOA	hthh	0.02	%	) 9.3	[illegible]	[illegible]	[illegible]	[illegible]

Surrogate Control Limits

SubMatrix: FRES_ WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP239S: PFAS Surrogate			
93C-PFOS	###	6+	150
93C8PFOA	###	p1	133

SubMatrix: HROUNDWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP239S: PFAS Surrogate			
93C-PFOS	###	6+	150
93C8PFOA	###	p1	133

SubMatrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP239S: PFAS Surrogate			
93C-PFOS	###	68	136
93C8PFOA	###	69	133

SubMatrix: SURFACE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP239S: PFAS Surrogate			
93C-PFOS	###	6+	150
93C8PFOA	###	p1	133

SubMatrix: WASTEWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP239S: PFAS Surrogate			
93C-PFOS	###	6+	150
93C8PFOA	###	p1	133

QUALITY CONTROL REPORT

Work Order	: **EM230804S**	gu: a	of 4Lbb
AD e5dD e5i	: **4**		
n ëavl	os TANTEC AUs TRALIA PTY LTt	t uy4Cul4C	omvDE4vs avlueMEDEP4v c aey4BCVa
n 4vluBl	[redacted]	n 4vluBl	o[redacted]
V22CaPP	ot m8 mt bf b1 r FmRSH VWmF gt Vn m ROUWSBVNK 8 In , VURWF Vt lV 3TT6	V22CaPP	op H aPlueeF 2 R7CEv: Duea 8 In VBPlCuEu 3f . f
Wvea7h4va	o----	Wvea7h4va	o+6f 315p9 96T9
gC4jaBl	o8 In _Tpp5_gr VROc g_b3	Mula Rus 7eaP FaBaEa2	oT1-c ui -bTb3
OC2aCvBs yaC	o-	Mula Vvué PEP n 4s s avBa2	oT9-c ui -bTb3
n -O-n vBs yaC	o5f pp9	IPPBa Mula	of 9-c ui -bTb3
Rus 7eaC	o[redacted]		
REa	o8 In _Tpp5_gr VROc g_BuPa		
QB4la vBs yaC	oRY/f 39/f 9_Buv2Eavu		
N404LPus 7eaPCaBaEa2	o1p		
N404LPus 7eaPuvué Pa2	o1T		

WhEP Ca74C PB7aCPa2aP uvi 7CaDE4BP Ca74C(P) wEh IhEP CalaCavBa0 FaPBdeP u77é l4 Iha Pus 7ea(P) uP PBys Ela2, BveaPP Iha Pus 7eEv: wuP B4v2BBla2 yi Vt R0 WhEP 24BBs avl Phue v4l ya Ca7C42BBa2, axBa7l Ev lBe0

WhEP QBuaEi n4vlC4eFa74C B4vluEvP Iha L4ea4wEv: Ev L4Cs ulE4vo

- t uy4Cul4C MB7aBula (MUg) Fa74C; FaeulEa gaCBavlu: a MEla CavBa (FgM) uv2 VBBa7luvBa t is EP
- c alh42 Beuvd (c B) uv2 t uy4Cul4C n4vlC4eR7Eda (t n R) Fa74C; FaB4DaC uv2 VBBa7luvBa t is EP
- c ulCx R7Eda (c R) Fa74C; FaB4DaC uv2 VBBa7luvBa t is EP

Signatories

WhEP 24BBs avl huPyaav aeaBlC4vBuaé PEva2 yi Iha uBlh4CEa2 PEvul4CEaPyae4w0maaBlC4vBPEvEv: EP BuCCEa2 4Bl Ev B4s 7aEuvBa wEh 7C4Ba2BCaPP7aBBEEa2 Ev bf n r F guC f f 0

Signatories	*Position*	*Accreditation Category*
[redacted]	c aluePWaus t au2aC	c aey4BCVa Iv4C uvBP, R7CEv: Duea, 8 In
[redacted]	bIn OC uvBn has EH	c aey4BCVa OC uvBP, R7CEv: Duea, 8 In

gu: a	o b 4Lbb
H 4Cl OC2aC	o mc b3T1Tf 5 Vs av2s avl f
n eBavl	o RWWNWm VURWF Vt IV gWY t WM
g C4jaBl	o 8 In _Tpp5_gr VROc g_b3

General Comments

Wha uvue lBue 7C4Ba2BCaP BPa2 yi Vt R huDa yaav 2aDae47a2 LC4s aPuyaEha2 EvlaCvulE4vuee CaB4: vEa2 7C4Ba2BCaP PBBh uP Ih4Pa 7ByaEha2 yi Iha URmgV, VgSV, VR uv2 Nmgc 0 Iv h4BPa 2aDae47a2 7C4Ba2BCaP uCa LBee Due2ula2 uv2 uCa 4Llav ul Iha BaBavl CaqBaPl0

H haCa s 4EPlBCa 2alaCs EvulE4v huP yaav 7aCl4Cs a2, CaPBaePuCa Ca74Cla2 4v u 2C waE hl yuPEP0

H haCa u Ca74Cla2 eaPP Ihuv (<) CaPBae lP hE haC Ihuv Iha t OF, IhlP s ui ya 2Ba l4 7Cls uC Pus 7ea axlCuBl/2E aPula 2BBlE4v uv2/4C EvFBLLBBavl Pus 7ea L4C uvuePEP0 H haCa Iha t OF 4L u Ca74Cla2 CaPBae 2BLaCP LC4s Pluv2uC2 t OF, IhlP s ui ya 2Ba l4 hE h s 4EPlBCa B4vlavl, EvFBLLBBavl Pus 7ea (Ca2BBa2 waE hl as 7e4i a2) 4Cs ulCx EvlaCaCavBa0

Kai o Vv4vi s 4BP = FaLaCP l4 Pus 7eaP whlBh uCa v4l P7aBBBBuee 7uC 4LIhlP w4Cl 4C2aCyBl L4Cs a2 7uC 4LIha Qn 7C4BaPP e4l
n VR NBs yaC= n VR Ca: lPlC vBs yaCLC4s 2uluyuPa s uEvluEva2 yi n has lBueVyPlCuBlP RaCDBaP0Wha n has lBueVyPlCuBlP RaCDBa lPu 2EDEP4v 4LIha Vs aCBuv n has lBueR4Bali 0
t OF = t ls lE 4LCa74CDv:
FgM = FaeulEDa gaCBavlu: a MBLaCavBa
= lv2BulaP Luea2 Qn

Laboratory Duplicate (DUP) Report

Wha qBuel B4vlC4e laCs tuy4Cul4C MB74Bula CalaCP l4 u Cuv24s e PaeaBla2 EvlCueuy4Cul4C P74E0 tuy4Cul4C 2B74BulaP 7C4DE2a Evl4Cs ulE4v Ca: uC2Ev: s alh42 7CaBlEP4v uv2 Pus 7ea halaC4: avaBl 0 Wha 7aCs lBa2 Cuv: aP l4C Iha FaeulEDa gaCBavl MaDEulE4v (FgM) 4L tuy4Cul4C MB74BulaP uCa P7aBBBa2 Ev Vt R c alh42 QH I-mN/31 uv2 uCa 2a7av2avl 4v Iha s u: vBB2a 4L CaPBaeP Ev B4s 7uCP4v l4 Iha eaDae 4L Ca74CDv: o FaPBae < f T ls aP t OF c N4 t ls lE; FaPBae yalwaav f T uv2 bT ls aPt OF oT% - 5T%; FaPBae > bT ls aPt OF oT% - bT%0

RBy-c ulCx: **s OIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA0SS: Mouni(re Co5ie5i @rued 1 40S-440°C) @C Loi: S03f Sf 3)									
mc b3T1Tf 5-T3p	Tpp5_RM3b3_b3T5Tp	mVT55oc 4EPlBCa n 4vlavl	----	T0f	%	b10T	b60D5	50B	T% - bT%
EP234A: Perla(oroyakcas(do5u6 A6udn @C Loi: S03899f)									
mc b3T1TT9-TTf	Vv4vi s 4BP	mgb3f XogaCleB4C4yBluva PBe4vlBuBE2 (gr BR)	3. 5-. 3-5	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C47avluva PBe4vlBuBE2 (gr gaR)	b. T6-9f -p	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4haxuva PBe4vlBuBE2 (gr SxR)	355-p6-p	T0lTTb	s : /d:	T0lTTb	T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4ha7luva PBe4vlBuBE2 (gr S7R)	3. 5-9b-1	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C44Bluva PBe4vlBuBE2 (gr OR)	f . 63-b3-f	T0lTTb	s : /d:	T0lT33	T0lT3.	f T0l	T% - 5T%
		mgb3f XogaCleB4C42aBuva PBe4vlBuBE2 (gr MR)	335-. . -3	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
mc b3T1Tf 5-T1p	Tpp5_RM355_b3T5Tp	mgb3f XogaCleB4C4yBluva PBe4vlBuBE2 (gr BR)	3. 5-. 3-5	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C47avluva PBe4vlBuBE2 (gr gaR)	b. T6-9f -p	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4haxuva PBe4vlBuBE2 (gr SxR)	355-p6-p	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4ha7luva PBe4vlBuBE2 (gr S7R)	3. 5-9b-1	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C44Bluva PBe4vlBuBE2 (gr OR)	f . 63-b3-f	T0lTTb	s : /d:	T0lTf f	T0lTf b	T0T	N4 t ls lE
		mgb3f XogaCleB4C42aBuva PBe4vlBuBE2 (gr MR)	335-. . -3	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
EP234B: Perla(oroyakcaCyrboxca6 A6udn @C Loi: S03899f)									
mc b3T1TT9-TTf	Vv4vi s 4BP	mgb3f XogaCleB4C47avluv4lBuBE2 (gr gaV)	b. T6-9T-3	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4haxuv4lBuBE2 (gr SxV)	3T. -bp-p	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4ha7luv4lBuBE2 (gr S7V)	3. 5-15-9	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C44Bluv4lBuBE2 (gr OV)	335-6. -f	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4v4vuv4lBuBE2 (gr NV)	3. 5-95-f	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C42aBuv4lBuBE2 (gr MV)	335-. 6-b	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4Bv2aBuv4lBuBE2 (gr UvMV)	bT51-9p-1	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4242aBuv4lBuBE2 (gr M4MV)	3T. -55-f	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE
		mgb3f XogaCleB4C4lCE2aBuv4lBuBE2 (gr WCMV)	. b6b9-9p-1	T0lTTb	s : /d:	<T0lTTb	<T0lTTb	T0T	N4 t ls lE

g u: a o 3 4Lbb
H 4Gl OC2aC o mc b3T1Tf 5 Vs av2s avl f
n e5avl o RWWNWm VURWF Vt IV gWY t WM
g C4jaBl o 8 In _Tpp5_gr VROc g_b3

RBy-c ulC5x: sOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234B: Perla(oroyakcaCyrboxcas6 A6udn @C Loi: S03899f) - 6o5iu5(ed									
mc b3T1TT9-TTf	Vv4vi s 4BP	mgb3f XogaCaB4G4lalCu2aBuv4lBuBB2 (gr WaMV)	3. 6-T6-.	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
		mgb3f XogaCaB4G4yBluv4lBuBB2 (gr BV)	3. 5-bb-p	T0TTf	s : /d:	<T0TTf	<T0TTf	T0T	N4 t is E
mc b3T1Tf 5-T1p	Tpp5_RM355_b3T5Tp	mgb3f XogaCaB4G47avluv4lBuBB2 (gr gaV)	b. T6-9T-3	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G4haxuv4lBuBB2 (gr SxV)	3T. -bp-p	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G4ha7luv4lBuBB2 (gr S7V)	3. 5-15-9	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G44Bluv4lBuBB2 (gr OV)	335-6. -f	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G4v4vuv4lBuBB2 (gr NV)	3. 5-95-f	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G42aBuv4lBuBB2 (gr MV)	335-. 6-b	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G4Bv2aBuv4lBuBB2 (gr UvMV)	bT51-9p-1	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G4242aBuv4lBuBB2 (gr M4MV)	3T. -55-f	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G4lCE2aBuv4lBuBB2 (gr WCMV)	. b6b9-9p-1	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XogaCaB4G4lalCu2aBuv4lBuBB2 (gr WaMV)	3. 6-T6-.	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
		mgb3f XogaCaB4G4yBluv4lBuBB2 (gr BV)	3. 5-bb-p	T0TTf	s : /d:	<T0TTf	<T0TTf	T0T	N4 t is E
EP234C: Perla(oroyakcas(ao5yDuden @C Loi: S03899f)									
mc b3T1TT9-TTf	Vv4vi s 4BP	mgb3f XogaCaB4G44Bluva PBa4vus l2a (r ORV)	. 5p-9f -6	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l24uBalBuBB2 (c ar ORVV)	b355-3f -9	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l24uBalBuBB2 (mlr ORVV)	b99f -5T-6	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l2a (c ar ORV)	3f 5T6-3b-1	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l2a (mlr ORV)	pf 5f -5T-b	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l24alhuv4e(c ar ORm)	bppp1-T9-.	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l24alhuv4e(mlr ORm)	f 69f -99-b	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
mc b3T1Tf 5-T1p	Tpp5_RM355_b3T5Tp	mgb3f XogaCaB4G44Bluva PBa4vus l2a (r ORV)	. 5p-9f -6	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l24uBalBuBB2 (c ar ORVV)	b355-3f -9	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l24uBalBuBB2 (mlr ORVV)	b99f -5T-6	T0TTTb	s : /d:	<T0TTTb	<T0TTTb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l2a (c ar ORV)	3f 5T6-3b-1	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l2a (mlr ORV)	pf 5f -5T-b	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l24alhuv4e(c ar ORm)	bppp1-T9-.	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l24alhuv4e(mlr ORm)	f 69f -99-b	T0TTT5	s : /d:	<T0TTT5	<T0TTT5	T0T	N4 t is E
EP234t : @:2) ma(oroieaoDer s(ao5u6 A6udn @C Loi: S03899f)									

g u: a o p 4Lbb
H 4Gl OC2aC o mc b3T1Tf 5 Vs av2s avl f
n e5avl o RWWNWmm VURWF Vt IV gWY t WM
g G4jaBl o 8 In _Tpp5_gr VROc g_b3

RBy-c ulCEx: **sOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234t : (@:2) mp(oroieaoDer s(do5u6 A6udn @C Loi: S03899f) - 6o5iu5(ed									
mc b3T1TT9-TTf	Vv4vi s 4BP	mg b3f Xopdo r eB4G4laeds aCPBde4vtB uBt2 (pdo r WR)	. 5. f bp-. b-p	T0ITT5	s : /d:	<T0ITT5	<T0ITT5	T0T	N4 t ts E
		mg b3f Xo6do r eB4G4laeds aCPBde4vtB uBt2 (6do r WR)	b. 6f 9-9. -b	T0ITT5	s : /d:	<T0ITT5	<T0ITT5	T0T	N4 t ts E
		mg b3f Xo1do r eB4G4laeds aCPBde4vtB uBt2 (1do r WR)	39f T1-3p-p	T0ITT5	s : /d:	<T0ITT5	<T0ITT5	T0T	N4 t ts E
		mg b3f Xof Tdo r eB4G4laeds aCPBde4vtB uBt2 (f Tdo r WR)	f bTbb6-6T-T	T0ITT5	s : /d:	<T0ITT5	<T0ITT5	T0T	N4 t ts E
mc b3T1Tf 5-T1p	Tpp5_RM355_b3T5Tp	mg b3f Xopdo r eB4G4laeds aCPBde4vtB uBt2 (pdo r WR)	. 5. f bp-. b-p	T0ITT5	s : /d:	<T0ITT5	<T0ITT5	T0T	N4 t ts E
		mg b3f Xo6do r eB4G4laeds aCPBde4vtB uBt2 (6do r WR)	b. 6f 9-9. -b	T0ITT5	s : /d:	<T0ITT5	<T0ITT5	T0T	N4 t ts E
		mg b3f Xo1do r eB4G4laeds aCPBde4vtB uBt2 (1do r WR)	39f T1-3p-p	T0ITT5	s : /d:	<T0ITT5	<T0ITT5	T0T	N4 t ts E
		mg b3f Xof Tdo r eB4G4laeds aCPBde4vtB uBt2 (f Tdo r WR)	f bTbb6-6T-T	T0ITT5	s : /d:	<T0ITT5	<T0ITT5	T0T	N4 t ts E
EP234P: PmAs s(Dn @C Loi: S03899f)									
mc b3T1TT9-TTf	Vv4vi s 4BP	mg b3f XoRBs 4Lgr VR	----	T0ITTb	s : /d:	T0IT35	T0IT39	f T0l	T% - 5T%
		mg b3f XoRBs 4Lgr SxR uv2 gr OR	355-p6-p/f . 63-b3-f	T0ITTb	s : /d:	T0IT35	T0IT39	f T0l	T% - 5T%
		mg b3f XoRBs 4Lgr VR (H V MmF t tE1)	----	T0ITTb	s : /d:	T0IT35	T0IT39	f T0l	T% - 5T%
mc b3T1Tf 5-T1p	Tpp5_RM355_b3T5Tp	mg b3f XoRBs 4Lgr VR	----	T0ITTb	s : /d:	T0ITf f	T0ITf b	10	N4 t ts E
		mg b3f XoRBs 4Lgr SxR uv2 gr OR	355-p6-p/f . 63-b3-f	T0ITTb	s : /d:	T0ITf f	T0ITf b	10	N4 t ts E
		mg b3f XoRBs 4Lgr VR (H V MmF t tE1)	----	T0ITTb	s : /d:	T0ITf f	T0ITf b	10	N4 t ts E

RBy-c ulCEx: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: Perla(oroyakcas(do5u6 A6udn @C Loi: S039Ff 8)									
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mg b3f Xoga0eB4G4haxuva PBde4vtB uBt2 (gr SxR)	355-p6-p	T0Tf	µ: /t	10 9	90f f	305	T% - bT%
		mg b3f Xoga0eB4G44Bluva PBde4vtB uBt2 (gr OR)	f . 63-b3-f	T0Tf	µ: /t	f T0	f f 0p	60b	T% - bT%
		mg b3f Xoga0eB4G4yBluva PBde4vtB uBt2 (gr BR)	3. 5-. 3-5	T0Tb	µ: /t	f 0 1T	f 0 9	T0	T% - bT%
		mg b3f Xoga0eB4G47avluva PBde4vtB uBt2 (gr gaR)	b. T6-9f -p	T0Tb	µ: /t	f 093	f 093	T0T	T% - bT%
		mg b3f Xoga0eB4G4ha7luva PBde4vtB uBt2 (gr S7R)	3. 5-9b-1	T0Tb	µ: /t	T0p.	T0p.	T0T	T% - bT%
		mg b3f Xoga0eB4G42aBuva PBde4vtB uBt2 (gr MR)	335-. . -3	T0Tb	µ: /t	T0Tp	T0T5	T0T	N4 t ts E
EP234A: Perla(oroyakcas(do5u6 A6udn @C Loi: S039Fff)									
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mg b3f Xoga0eB4G4haxuva PBde4vtB uBt2 (gr SxR)	355-p6-p	T0Tf	µ: /t	T0T6	T0T6	T0T	N4 t ts E
		mg b3f Xoga0eB4G44Bluva PBde4vtB uBt2 (gr OR)	f . 63-b3-f	T0Tf	µ: /t	T0T1	T0T1	f b09	N4 t ts E
		mg b3f Xoga0eB4G4yBluva PBde4vtB uBt2 (gr BR)	3. 5-. 3-5	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t ts E
		mg b3f Xoga0eB4G47avluva PBde4vtB uBt2 (gr gaR)	b. T6-9f -p	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t ts E
		mg b3f Xoga0eB4G4ha7luva PBde4vtB uBt2 (gr S7R)	3. 5-9b-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t ts E

g u: a
H 4Cl OC2aC
n ëavl
g C4jaBl

o 5 4Lbb
o mc b3T1Tf 5 Vs av2s avl f
o RWWNWm VURWF Vt IV gWY t WM
o 8 In _Tpp5_gr VROc g_b3

RBy-c ulCx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: Perla(oroyakcas(ado5u6 A6udn @C Loi: S039Ff f) - 6o5iu5(ed									
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mgb3f XogaCdB4G42aBuva PBd4vlBuBB2 (gr MR)	335-. . -3	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
mc b3T1Tf 5-Tp.	Tpp5_c H Tp6_l_b3T5T5	mgb3f XogaCdB4G4haxuva PBd4vlBuBB2 (gr SxR)	355-p6-p	T0Tf	µ: /t	f 0f T	f 0f 6	5Qp	T% - bT%
		mgb3f XogaCdB4G44Bluva PBd4vlBuBB2 (gr OR)	f . 63-b3-f	T0Tf	µ: /t	f 05p	f 059	30f	T% - bT%
		mgb3f XogaCdB4G4yBluva PBd4vlBuBB2 (gr BR)	3. 5-. 3-5	T0Tb	µ: /t	T0f b	T0f b	T0T	N4 t is lE
		mgb3f XogaCdB4G47avluva PBd4vlBuBB2 (gr gaR)	b. T6-9f -p	T0Tb	µ: /t	T0f p	T0f 6	f 309	N4 t is lE
		mgb3f XogaCdB4G4ha7luva PBd4vlBuBB2 (gr S7R)	3. 5-9b-1	T0Tb	µ: /t	T0T.	T0T.	T0T	N4 t is lE
		mgb3f XogaCdB4G42aBuva PBd4vlBuBB2 (gr MR)	335-. . -3	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
EP234A: Perla(oroyakcas(ado5u6 A6udn @C Loi: S039S28)									
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mgb3f XogaCdB4G4haxuva PBd4vlBuBB2 (gr SxR)	355-p6-p	T0Tf	µ: /t	T0Tb	T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G44Bluva PBd4vlBuBB2 (gr OR)	f . 63-b3-f	T0Tf	µ: /t	T0T5	T0T5	T0T	N4 t is lE
		mgb3f XogaCdB4G4yBluva PBd4vlBuBB2 (gr BR)	3. 5-. 3-5	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G47avluva PBd4vlBuBB2 (gr gaR)	b. T6-9f -p	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4ha7luva PBd4vlBuBB2 (gr S7R)	3. 5-9b-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G42aBuva PBd4vlBuBB2 (gr MR)	335-. . -3	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
EP234A: Perla(oroyakcas(ado5u6 A6udn @C Loi: S039S2f)									
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mgb3f XogaCdB4G4haxuva PBd4vlBuBB2 (gr SxR)	355-p6-p	T0Tf	µ: /t	<T0Tf	<T0Tf	T0T	N4 t is lE
		mgb3f XogaCdB4G44Bluva PBd4vlBuBB2 (gr OR)	f . 63-b3-f	T0Tf	µ: /t	<T0Tf	<T0Tf	T0T	N4 t is lE
		mgb3f XogaCdB4G4yBluva PBd4vlBuBB2 (gr BR)	3. 5-. 3-5	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G47avluva PBd4vlBuBB2 (gr gaR)	b. T6-9f -p	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4ha7luva PBd4vlBuBB2 (gr S7R)	3. 5-9b-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G42aBuva PBd4vlBuBB2 (gr MR)	335-. . -3	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
EP234B: Perla(oroyakcaCyrboxcas6 A6udn @C Loi: S039Ff 8)									
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mgb3f XogaCdB4G44Bluv4lBuBB2 (gr OV)	335-6. -f	T0Tf	µ: /t	T0lf	T0lf	T0T	T% - bT%
		mgb3f XogaCdB4G47avluv4lBuBB2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	T05p	T055	f 09	T% - bT%
		mgb3f XogaCdB4G4haxuv4lBuBB2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	b09b	b0l.	f 05	T% - bT%
		mgb3f XogaCdB4G4ha7luv4lBuBB2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	T0 b	T0 p	b0b	T% - bT%
		mgb3f XogaCdB4G4v4vuv4lBuBB2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G42aBuv4lBuBB2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4Bv2aBuv4lBuBB2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4242aBuv4lBuBB2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4lCl2aBuv4lBuBB2 (gr WCMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4laICu2aBuv4lBuBB2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is lE
		mgb3f XogaCdB4G4yBluv4lBuBB2 (gr BV)	3. 5-bb-p	T0f	µ: /t	T0p	T0p	T0T	N4 t is lE
EP234B: Perla(oroyakcaCyrboxcas6 A6udn @C Loi: S039Fff)									
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mgb3f XogaCdB4G44Bluv4lBuBB2 (gr OV)	335-6. -f	T0Tf	µ: /t	<T0Tf	<T0Tf	T0T	N4 t is lE
		mgb3f XogaCdB4G47avluv4lBuBB2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4haxuv4lBuBB2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4ha7luv4lBuBB2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE
		mgb3f XogaCdB4G4v4vuv4lBuBB2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is lE

g u: a o 6 4Lbb
H 4Gl OG2aC o mc b3T1Tf 5 Vs av2s avl f
n e5avl o RWWNWm VURWF Vt IV gWY t WM
g G4jaBl o 8 In _Tpp5_gr VROc g_b3

RBy-c ulGx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234B: Perla(oroyakcaCyrboxca6 A6udn @C Loi: S039Ff) - 6o5iu5(ed									
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mgb3f XogaCe84G42aBuv4IBuBI2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4Bv2aBuv4IBuBI2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4242aBuv4IBuBI2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4lCI2aBuv4IBuBI2 (gr WCMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4lalCu2aBuv4IBuBI2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XogaCe84G4yBluv4IBuBI2 (gr BV)	3. 5-bb-p	T0f	µ: /t	<T0f	<T0f	T0T	N4 t is E
mc b3T1Tf 5-Tp.	Tpp5_c H Tp6_I_b3T5T5	mgb3f XogaCe84G44Bluv4IBuBI2 (gr OV)	335-6. -f	T0Tf	µ: /t	T0T5	T0T6	T0T	N4 t is E
		mgb3f XogaCe84G47avluv4IBuBI2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	T0Tp	T0Tp	T0T	N4 t is E
		mgb3f XogaCe84G4haxuv4IBuBI2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	T0f 9	T0f 9	T0T	N4 t is E
		mgb3f XogaCe84G4ha7luv4IBuBI2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4v4vuv4IBuBI2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G42aBuv4IBuBI2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4Bv2aBuv4IBuBI2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4242aBuv4IBuBI2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4lCI2aBuv4IBuBI2 (gr WCMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4lalCu2aBuv4IBuBI2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XogaCe84G4yBluv4IBuBI2 (gr BV)	3. 5-bb-p	T0f	µ: /t	<T0f	<T0f	T0T	N4 t is E
EP234B: Perla(oroyakcaCyrboxca6 A6udn @C Loi: S039S28)									
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mgb3f XogaCe84G44Bluv4IBuBI2 (gr OV)	335-6. -f	T0Tf	µ: /t	<T0Tf	<T0Tf	T0T	N4 t is E
		mgb3f XogaCe84G47avluv4IBuBI2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4haxuv4IBuBI2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4ha7luv4IBuBI2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4v4vuv4IBuBI2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G42aBuv4IBuBI2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4Bv2aBuv4IBuBI2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4242aBuv4IBuBI2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4lCI2aBuv4IBuBI2 (gr WCMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4lalCu2aBuv4IBuBI2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XogaCe84G4yBluv4IBuBI2 (gr BV)	3. 5-bb-p	T0f	µ: /t	<T0f	<T0f	T0T	N4 t is E
EP234B: Perla(oroyakcaCyrboxca6 A6udn @C Loi: S039S2f)									
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mgb3f XogaCe84G44Bluv4IBuBI2 (gr OV)	335-6. -f	T0Tf	µ: /t	<T0Tf	<T0Tf	T0T	N4 t is E
		mgb3f XogaCe84G47avluv4IBuBI2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4haxuv4IBuBI2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4ha7luv4IBuBI2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4v4vuv4IBuBI2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G42aBuv4IBuBI2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4Bv2aBuv4IBuBI2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4242aBuv4IBuBI2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4lCI2aBuv4IBuBI2 (gr WCMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XogaCe84G4lalCu2aBuv4IBuBI2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E

gu: a o . 4Lbb
H 4Gl OG2aC o mc b3T1Tf 5 Vs av2s avl f
n e5avl o RWWNWm VURWF Vt IV gWY t WM
g G4jaBl o 8 In _Tpp5_gr VROc g_b3

RBy-c ulGx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234B: Perla(oroyakcaCyrboxcas6 A6udn @C Loi: S039S2f) - 6o5iu5(ed									
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mgb3f XogaCaB4G4yBluv4lBuBB2 (gr BV)	3. 5-bb-p	T0f	µ: /t	<T0f	<T0f	T0T	N4 t is E
EP234C: Perla(oroyakcas(ado5yDuden @C Loi: S039Ff 8)									
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mgb3f XogaCaB4G4Bluva PBe4vus l2a (r ORV)	. 5p-9f -6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l24uBalBuBB2 (c ar ORVV)	b355-3f -9	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G4Bluva PBe4vus l24uBalBuBB2 (mlr ORVV)	b99f -5T-6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l2a (c ar ORV)	3f 5T6-3b-1	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G4Bluva PBe4vus l2a (mlr ORV)	pf 5f -5T-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l24alhuv4e(c ar ORm)	bppp1-T9-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G4Bluva PBe4vus l24alhuv4e(mlr ORm)	f 69f -99-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
EP234C: Perla(oroyakcas(ado5yDuden @C Loi: S039Ff f)									
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mgb3f XogaCaB4G4Bluva PBe4vus l2a (r ORV)	. 5p-9f -6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l24uBalBuBB2 (c ar ORVV)	b355-3f -9	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G4Bluva PBe4vus l24uBalBuBB2 (mlr ORVV)	b99f -5T-6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l2a (c ar ORV)	3f 5T6-3b-1	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G4Bluva PBe4vus l2a (mlr ORV)	pf 5f -5T-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l24alhuv4e(c ar ORm)	bppp1-T9-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G4Bluva PBe4vus l24alhuv4e(mlr ORm)	f 69f -99-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
mc b3T1Tf 5-Tp.	Tpp5_c H Tp6_l_b3T5T5	mgb3f XogaCaB4G4Bluva PBe4vus l2a (r ORV)	. 5p-9f -6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l24uBalBuBB2 (c ar ORVV)	b355-3f -9	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G4Bluva PBe4vus l24uBalBuBB2 (mlr ORVV)	b99f -5T-6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l2a (c ar ORV)	3f 5T6-3b-1	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XoN-mlhi e7aCaB4G4Bluva PBe4vus l2a (mlr ORV)	pf 5f -5T-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mgb3f XoN-c alhi e7aCaB4G4Bluva PBe4vus l24alhuv4e(c ar ORm)	bppp1-T9-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E

g u: a o 1 4Lbb
H 4Cl OC2aC o mc b3T1Tf 5 Vs av2s avl f
n e5avl o RWWNWm VURWF Vt IV gWY t WM
g C4jaB o 8 In _Tpp5_g r VROc g_b3

RBy-c ulC5x: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234C: Perla(oroyakcas(ado5yD uden @C Loi: S039Ff f) - 6o5iu5(ed									
mc b3T1Tf 5-Tp.	Tpp5_c H Tp6_I_b3T5T5	mg b3f XoN-mlhi e7aCaB4C44Bluva PBe4vus E2a lhuv4e(mlr ORm)	f 69f -99-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
EP234C: Perla(oroyakcas(ado5yD uden @C Loi: S039S28)									
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mg b3f XogaCaB4C44Bluva PBe4vus E2a (r ORV)	. 5p-9f -6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E24uBalBuBE2 (c ar ORVV)	b355-3f -9	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mg b3f XoN-mlhi e7aCaB4C44Bluva PBe4vus E24uBalBuBE2 (mlr ORVV)	b99f -5T-6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E2a (c ar ORV)	3f 5T6-3b-1	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f XoN-mlhi e7aCaB4C44Bluva PBe4vus E2a (mlr ORV)	pf 5f -5T-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E24alhuv4e(c ar ORm)	bppp1-T9-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f XoN-mlhi e7aCaB4C44Bluva PBe4vus E24alhuv4e(mlr ORm)	f 69f -99-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
EP234C: Perla(oroyakcas(ado5yD uden @C Loi: S039S2f)									
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mg b3f XogaCaB4C44Bluva PBe4vus E2a (r ORV)	. 5p-9f -6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E24uBalBuBE2 (c ar ORVV)	b355-3f -9	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mg b3f XoN-mlhi e7aCaB4C44Bluva PBe4vus E24uBalBuBE2 (mlr ORVV)	b99f -5T-6	T0Tb	µ: /t	<T0Tb	<T0Tb	T0T	N4 t is E
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E2a (c ar ORV)	3f 5T6-3b-1	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f XoN-mlhi e7aCaB4C44Bluva PBe4vus E2a (mlr ORV)	pf 5f -5T-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E24alhuv4e(c ar ORm)	bppp1-T9-.	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f XoN-mlhi e7aCaB4C44Bluva PBe4vus E24alhuv4e(mlr ORm)	f 69f -99-b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
EP234t : @:2) ma(oroieaoDer s(ado5u6 A6udn @C Loi: S039Ff 8)									
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mg b3f Xopdo r eB4C4laeks aCPBe4vlBuBE2 (pdo r WR)	. 5. f bp-. b-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo6do r eB4C4laeks aCPBe4vlBuBE2 (6do r WR)	b. 6f 9-9. -b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo1do r eB4C4laeks aCPBe4vlBuBE2 (1do r WR)	39f T1-3p-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xof Tdo r eB4C4laeks aCPBe4vlBuBE2 (f Tdo r WR)	f bTbb6-6T-T	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
EP234t : @:2) ma(oroieaoDer s(ado5u6 A6udn @C Loi: S039Ff f)									

g u: a
H 4Cl OC2aC
n ea vl
g C4jaB

o 9 4Lbb
o mc b3T1Tf 5 Vs av2s avl f
o RWWNWm VURWF Vt IV gWY t WM
o 8 In _Tpp5_gr VROc g_b3

RBy-c ulCx: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234t : @:2) ma(oroieaoDer s(alo5u6 A6udn @C Loi: S039Ff f) - 6o5iu5(ed									
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mg b3f Xopdo r eB4C4laeds aCPBde4vIB uBB2 (pdo r WR)	. 5. f bp-. b-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo6do r eB4C4laeds aCPBde4vIB uBB2 (6do r WR)	b. 6f 9-9. -b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo1do r eB4C4laeds aCPBde4vIB uBB2 (1do r WR)	39f T1-3p-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xof Tdo r eB4C4laeds aCPBde4vIB uBB2 (f Tdo r WR)	f bTbb6-6T-T	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
mc b3T1Tf 5-Tp.	Tpp5_c H Tp6_I_b3T5T5	mg b3f Xopdo r eB4C4laeds aCPBde4vIB uBB2 (pdo r WR)	. 5. f bp-. b-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo6do r eB4C4laeds aCPBde4vIB uBB2 (6do r WR)	b. 6f 9-9. -b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo1do r eB4C4laeds aCPBde4vIB uBB2 (1do r WR)	39f T1-3p-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xof Tdo r eB4C4laeds aCPBde4vIB uBB2 (f Tdo r WR)	f bTbb6-6T-T	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
EP234t : @:2) ma(oroieaoDer s(alo5u6 A6udn @C Loi: S039S28)									
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mg b3f Xopdo r eB4C4laeds aCPBde4vIB uBB2 (pdo r WR)	. 5. f bp-. b-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo6do r eB4C4laeds aCPBde4vIB uBB2 (6do r WR)	b. 6f 9-9. -b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo1do r eB4C4laeds aCPBde4vIB uBB2 (1do r WR)	39f T1-3p-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xof Tdo r eB4C4laeds aCPBde4vIB uBB2 (f Tdo r WR)	f bTbb6-6T-T	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
EP234t : @:2) ma(oroieaoDer s(alo5u6 A6udn @C Loi: S039S2f)									
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mg b3f Xopdo r eB4C4laeds aCPBde4vIB uBB2 (pdo r WR)	. 5. f bp-. b-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo6do r eB4C4laeds aCPBde4vIB uBB2 (6do r WR)	b. 6f 9-9. -b	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xo1do r eB4C4laeds aCPBde4vIB uBB2 (1do r WR)	39f T1-3p-p	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
		mg b3f Xof Tdo r eB4C4laeds aCPBde4vIB uBB2 (f Tdo r WR)	f bTbb6-6T-T	T0T5	µ: /t	<T0T5	<T0T5	T0T	N4 t is E
EP234P: PmAs s(Dn @C Loi: S039Ff 8)									
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mg b3f XoRBs 4Lgr VR	----	T0Tf	µ: /t	b90f	3T0f	30p	T% - bT%
		mg b3f XoRBs 4Lgr SxR uv2 gr OR	355-p6-p/f . 63-b3-f	T0Tf	µ: /t	f 90f5	bT05	50f	T% - bT%
		mg b3f XoRBs 4Lgr VR (H V MmF t tEH)	----	T0Tf	µ: /t	b60	b. 0	306	T% - bT%
EP234P: PmAs s(Dn @C Loi: S039Ff f)									

RBy-c ulQ5x: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234P: PmAs s(D n @C Loi: S039Fff) - 6o5iu5(ed									
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mg b3f XoRBs 4Lg r VR	----	T0Tf	µ: /t	T0f p	T0f p	T0T	T% - 5T%
		mg b3f XoRBs 4Lg r SxR uv2 g r OR	355-p6-p/f . 63-b3-f	T0Tf	µ: /t	T0f p	T0f p	T0T	T% - 5T%
		mg b3f XoRBs 4Lg r VR (H V MmF t EH)	----	T0Tf	µ: /t	T0f p	T0f p	T0T	T% - 5T%
mc b3T1Tf 5-Tp.	Tpp5_c H Tp6_l_b3T5T5	mg b3f XoRBs 4Lg r VR	----	T0Tf	µ: /t	30b.	3039	306	T% - bT%
		mg b3f XoRBs 4Lg r SxR uv2 g r OR	355-p6-p/f . 63-b3-f	T0Tf	µ: /t	b06p	b0 5	p0f	T% - bT%
		mg b3f XoRBs 4Lg r VR (H V MmF t EH)	----	T0Tf	µ: /t	30T6	30f 6	30b	T% - bT%
EP234P: PmAs s(D n @C Loi: S039S28)									
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mg b3f XoRBs 4Lg r VR	----	T0Tf	µ: /t	T0T.	T0T.	T0T	N4 t ts E
		mg b3f XoRBs 4Lg r SxR uv2 g r OR	355-p6-p/f . 63-b3-f	T0Tf	µ: /t	T0T.	T0T.	T0T	N4 t ts E
		mg b3f XoRBs 4Lg r VR (H V MmF t EH)	----	T0Tf	µ: /t	T0T.	T0T.	T0T	N4 t ts E
EP234P: PmAs s(D n @C Loi: S039S2f)									
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mg b3f XoRBs 4Lg r VR	----	T0Tf	µ: /t	<T0Tf	<T0Tf	T0T	N4 t ts E
		mg b3f XoRBs 4Lg r SxR uv2 g r OR	355-p6-p/f . 63-b3-f	T0Tf	µ: /t	<T0Tf	<T0Tf	T0T	N4 t ts E
		mg b3f XoRBs 4Lg r VR (H V MmF t EH)	----	T0Tf	µ: /t	<T0Tf	<T0Tf	T0T	N4 t ts E

Method Blank (MB) and Laboratory Control Sample (LCS) Report

Wha qBueEi B4vlG4e laGs c alh42 / t uy4Gul4G Beuvd GalaCP l4 uv uvue la LGaa s ulCEx l4 whEBh ue Gau: avlP uGa u22a2 Ev lha Pus a D4eBs aP 4C 7G474G4vP uP BPa2 Ev Pluv2uG2 Pus 7ea 7Ga7uGulE4v0 Wha 7BG74Pa 4L lhEP Qn 7uGus alaC EP l4 s 4vE4C 74lavlEue euy4Gul4G B4vlus Evul84v0 Wha qBueEi B4vlG4e laGs t uy4Gul4G n4vlG4e Rus 7ea (t n R) GalaCP l4 u BaCEE52 GalaGavBa s ulaCEue, 4C u dv4wv EvlaGaGavBa LGaa s ulCEx P7Eda2 wEh luC al uvue laP0Wha 7BG74Pa 4LlhEP Qn 7uGus alaCEP l4 s 4vE4Cs alh42 7GaBEE4v uv2 uBBBGuBi Ev2a7av2avl 4LPus 7ea s ulCEx0Mi vus EB FaB4DaC t is EPuGa yuPa2 4v PlulEEHBueaDueBul84v 4L7G4BaPPa2 t n R0

RBy-c ulCEx: **s OIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP234A: Perla(oroyakcas(‹lo5u6 A6udn @CLoi: S03899f)								
mgb3f XogaGaB4G4yBluva PB44vlBuB82 (gr BR)	3. 5-. 3-5	T0TTTb	s : /d:	<T0TTTb	T0TTf f f s : /d:	950p	. b0T	f b1
mgb3f XogaGaB4G47avluva PB44vlBuB82 (gr gaR)	b. T6-9f -p	T0TTTb	s : /d:	<T0TTTb	T0TTf f 1 s : /d:	950T	. 30T	f b3
mgb3f XogaGaB4G4haxuva PB44vlBuB82 (gr SxR)	355-p6-p	T0TTTb	s : /d:	<T0TTTb	T0TTf f p s : /d:	9f 0	6. 0T	f 3T
mgb3f XogaGaB4G4ha7luva PB44vlBuB82 (gr S7R)	3. 5-9b-1	T0TTTb	s : /d:	<T0TTTb	T0TTf f 9 s : /d:	9. 0l	. T0T	f 3b
mgb3f XogaGaB4G44Bluva PB44vlBuB82 (gr OR)	f . 63-b3-f	T0TTTb	s : /d:	<T0TTTb	T0TTf f 6 s : /d:	9T06	610T	f 36
mgb3f XogaGaB4G42aBuva PB44vlBuB82 (gr MR)	335-. . -3	T0TTTb	s : /d:	<T0TTTb	T0TTf bf s : /d:	9f 09	590T	f 3p
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S03899f)								
mgb3f XogaGaB4G4yBluv4lBuB82 (gr BV)	3. 5-bb-p	T0TTf	s : /d:	<T0TTf	T0TT6b5 s : /d:	1. 06	. f 0T	f 35
mgb3f XogaGaB4G47avluv4lBuB82 (gr gaV)	b. T6-9T-3	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	160b	690T	f 3b
mgb3f XogaGaB4G4haxuv4lBuB82 (gr SxV)	3T. -bp-p	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	1b0p	. T0T	f 3b
mgb3f XogaGaB4G4ha7luv4lBuB82 (gr S7V)	3. 5-15-9	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	1503	. f 0T	f 3f
mgb3f XogaGaB4G44Bluv4lBuB82 (gr OV)	335-6. -f	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	950b	690T	f 33
mgb3f XogaGaB4G4v4vuv4lBuB82 (gr NV)	3. 5-95-f	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	9f 0T	. b0T	f b9
mgb3f XogaGaB4G42aBuv4lBuB82 (gr MV)	335-. 6-b	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	1p0p	690T	f 33
mgb3f XogaGaB4G4Bv2aBuv4lBuB82 (gr UvMV)	bT51-9p-1	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	1f 0b	6p0T	f 36
mgb3f XogaGaB4G4242aBuv4lBuB82 (gr M4MV)	3T. -55-f	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	1306	690T	f 35
mgb3f XogaGaB4G4lG2aBuv4lBuB82 (gr WDMV)	. b6b9-9p-1	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	1T0T	660T	f 39
mgb3f XogaGaB4G4laIGu2aBuv4lBuB82 (gr WaMV)	3. 6-T6-.	T0TTT5	s : /d:	<T0TTT5	T0TT3f b s : /d:	130b	690T	f 33
EP234C: Perla(oroyakcas(‹lo5yD uden @CLoi: S03899f)								
mgb3f XogaGaB4G44Bluva PB44vus E2a (r ORV)	. 5p-9f -6	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	130f	6. 0T	f 3.
mgb3f XoN-c alhi e7aGaB4G44Bluva PB44vus E2a (c ar ORV)	3f 5T6-3b-1	T0TTT5	s : /d:	<T0TTT5	T0TT3f b s : /d:	950b	. T0T	f 3T
mgb3f XoN-mlhi e7aGaB4G44Bluva PB44vus E2a (mlr ORV)	pf 5f -5T-b	T0TTT5	s : /d:	<T0TTT5	T0TT3f b s : /d:	1503	. T0T	f 3T
mgb3f XoN-c alhi e7aGaB4G44Bluva PB44vus E24alhuv4e (c ar ORm)	bppp1-T9-.	T0TTT5	s : /d:	<T0TTT5	T0TT3f b s : /d:	1506	. T0T	f 3T
mgb3f XoN-mlhi e7aGaB4G44Bluva PB44vus E24alhuv4e (mlr ORm)	f 69f -99-b	T0TTT5	s : /d:	<T0TTT5	T0TT3f b s : /d:	9p0T	. T0T	f 3T
mgb3f XoN-c alhi e7aGaB4G44Bluva PB44vus E24uBalBuB82 (c ar ORVV)	b355-3f -9	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	1b0f	630T	f pp
mgb3f XoN-mlhi e7aGaB4G44Bluva PB44vus E24uBalBuB82 (mlr ORVV)	b99f -5T-6	T0TTTb	s : /d:	<T0TTTb	T0TTf b5 s : /d:	. 906	6f 0T	f 39
EP234t : @:2) ma(oroieaoD er s(‹lo5u6 A6udn @CLoi: S03899f)								

RBy-c ulCEx: **sOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234t : @:2) ma(oroieaoDer s(ao5u6 A6udn @CLoi: S03899f) - 6o5iu5(ed								
mgb3f Xopdo r eB4C4lae4s aCPBe4vIBuBI2 (pdo r WR)	. 5. f bp-. b-p	T0fTT5	s : /d:	<T0fTT5	T0fTf f . s : /d:	110	6b0T	f p5
mgb3f Xo6do r eB4C4lae4s aCPBe4vIBuBI2 (6do r WR)	b. 6f 9-9. -b	T0fTT5	s : /d:	<T0fTT5	T0fTf f 9 s : /d:	9303	6p0T	f pT
mgb3f Xo1do r eB4C4lae4s aCPBe4vIBuBI2 (1do r WR)	39f T1-3p-p	T0fTT5	s : /d:	<T0fTT5	T0fTf b s : /d:	930T	650T	f 3.
mgb3f Xof Tdo r eB4C4lae4s aCPBe4vIBuBI2 (f Tdo r WR)	f bTbb6-6T-T	T0fTT5	s : /d:	<T0fTT5	T0fTf bf s : /d:	1p0T	. T0T	f 3T
EP234P: PmAs s(Dn @CLoi: S03899f)								
mgb3f XoRBs 4Lgr VR	----	T0fTTb	s : /d:	<T0fTTb	----	----	----	----
mgb3f XoRBs 4Lgr SxR uv2 gr OR	355-p6-p/f . 63-b3-f	T0fTTb	s : /d:	<T0fTTb	----	----	----	----
mgb3f XoRBs 4Lgr VR (H V MmF t tE1)	----	T0fTTb	s : /d:	<T0fTTb	----	----	----	----

RBy-c ulCEx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: Perla(oroyakcas(ao5u6 A6udn @CLoi: S039Ff 8)								
mgb3f XogaCaB4C4yBluva PBe4vIBuBI2 (gr BR)	3. 5-. 3-5	T0fTb	µ: /t	<T0fTb	T0bbb µ: /t	9. 0f	. b0T	f 3T
mgb3f XogaCaB4C47avluva PBe4vIBuBI2 (gr gaR)	b. T6-9f -p	T0fTb	µ: /t	<T0fTb	T0b35 µ: /t	9p0	. f 0T	f b.
mgb3f XogaCaB4C4haxuva PBe4vIBuBI2 (gr SxR)	355-p6-p	T0fTf	µ: /t	<T0fTf	T0bb1 µ: /t	9b0T	610T	f 3f
mgb3f XogaCaB4C4ha7luva PBe4vIBuBI2 (gr S7R)	3. 5-9b-1	T0fTb	µ: /t	<T0fTb	T0b31 µ: /t	f Tb	690T	f 3p
mgb3f XogaCaB4C44Bluva PBe4vIBuBI2 (gr OR)	f . 63-b3-f	T0fTf	µ: /t	<T0fTf	T0b3b µ: /t	9b0T	650T	f pT
mgb3f XogaCaB4C42aBuva PBe4vIBuBI2 (gr MR)	335-. . -3	T0fTb	µ: /t	<T0fTb	T0bpf µ: /t	150	530T	f pb
EP234A: Perla(oroyakcas(ao5u6 A6udn @CLoi: S039Ff f)								
mgb3f XogaCaB4C4yBluva PBe4vIBuBI2 (gr BR)	3. 5-. 3-5	T0fTb	µ: /t	<T0fTb	T0bbb µ: /t	930f	. b0T	f 3T
mgb3f XogaCaB4C47avluva PBe4vIBuBI2 (gr gaR)	b. T6-9f -p	T0fTb	µ: /t	<T0fTb	T0b35 µ: /t	f f .	. f 0T	f b.
mgb3f XogaCaB4C4haxuva PBe4vIBuBI2 (gr SxR)	355-p6-p	T0fTf	µ: /t	<T0fTf	T0bb1 µ: /t	9p03	610T	f 3f
mgb3f XogaCaB4C4ha7luva PBe4vIBuBI2 (gr S7R)	3. 5-9b-1	T0fTb	µ: /t	<T0fTb	T0b31 µ: /t	f f 1	690T	f 3p
mgb3f XogaCaB4C44Bluva PBe4vIBuBI2 (gr OR)	f . 63-b3-f	T0fTf	µ: /t	<T0fTf	T0b3b µ: /t	f Tb	650T	f pT
mgb3f XogaCaB4C42aBuva PBe4vIBuBI2 (gr MR)	335-. . -3	T0fTb	µ: /t	<T0fTb	T0bpf µ: /t	f TT	530T	f pb
EP234A: Perla(oroyakcas(ao5u6 A6udn @CLoi: S039S28)								
mgb3f XogaCaB4C4yBluva PBe4vIBuBI2 (gr BR)	3. 5-. 3-5	T0fTb	µ: /t	<T0fTb	T0bbb µ: /t	9f 0	. b0T	f 3T
mgb3f XogaCaB4C47avluva PBe4vIBuBI2 (gr gaR)	b. T6-9f -p	T0fTb	µ: /t	<T0fTb	T0b35 µ: /t	f T1	. f 0T	f b.
mgb3f XogaCaB4C4haxuva PBe4vIBuBI2 (gr SxR)	355-p6-p	T0fTf	µ: /t	<T0fTf	T0bb1 µ: /t	9506	610T	f 3f
mgb3f XogaCaB4C4ha7luva PBe4vIBuBI2 (gr S7R)	3. 5-9b-1	T0fTb	µ: /t	<T0fTb	T0b31 µ: /t	f T1	690T	f 3p
mgb3f XogaCaB4C44Bluva PBe4vIBuBI2 (gr OR)	f . 63-b3-f	T0fTf	µ: /t	<T0fTf	T0b3b µ: /t	930f	650T	f pT
mgb3f XogaCaB4C42aBuva PBe4vIBuBI2 (gr MR)	335-. . -3	T0fTb	µ: /t	<T0fTb	T0bpf µ: /t	110l	530T	f pb
EP234A: Perla(oroyakcas(ao5u6 A6udn @CLoi: S039S2f)								

RBy-c ulG5x: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: Perla(oroyakcas(ao5u6 A6udn @CLoi: S039S2f) - 6o5iu5(ed								
mgb3f Xoga0aB4G4yBluva PBa4vlBuBB2 (gr BR)	3. 5-. 3-5	T0Tb	µ: /t	<T0Tb	T0bbb µ: /t	1. 09	. b0T	f 3T
mgb3f Xoga0aB4G47avluva PBa4vlBuBB2 (gr gaR)	b. T6-9f -p	T0Tb	µ: /t	<T0Tb	T0b35 µ: /t	9p0f	. f 0T	f b.
mgb3f Xoga0aB4G4haxuva PBa4vlBuBB2 (gr SxR)	355-p6-p	T0Tf	µ: /t	<T0Tf	T0bb1 µ: /t	9f 06	610T	f 3f
mgb3f Xoga0aB4G4ha7luva PBa4vlBuBB2 (gr S7R)	3. 5-9b-1	T0Tb	µ: /t	<T0Tb	T0b31 µ: /t	f Tb	690T	f 3p
mgb3f Xoga0aB4G44Bluva PBa4vlBuBB2 (gr OR)	f . 63-b3-f	T0Tf	µ: /t	<T0Tf	T0b3b µ: /t	9f 0	650T	f pT
mgb3f Xoga0aB4G42aBuva PBa4vlBuBB2 (gr MR)	335-. . -3	T0Tb	µ: /t	<T0Tb	T0bpf µ: /t	190f	530T	f pb
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S039Ff 8)								
mgb3f Xoga0aB4G4yBluv4lBuBB2 (gr BV)	3. 5-bb-p	T0f	µ: /t	<T0f	f 0b5 µ: /t	9605	. 30T	f b9
mgb3f Xoga0aB4G47avluv4lBuBB2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	950	. b0T	f b9
mgb3f Xoga0aB4G4haxuv4lBuBB2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9T09	. b0T	f b9
mgb3f Xoga0aB4G4ha7luv4lBuBB2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9309	. b0T	f 3T
mgb3f Xoga0aB4G44Bluv4lBuBB2 (gr OV)	335-6. -f	T0Tf	µ: /t	<T0Tf	T0b5 µ: /t	9305	. f 0T	f 33
mgb3f Xoga0aB4G4v4vuv4lBuBB2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	930b	690T	f 3T
mgb3f Xoga0aB4G42aBuv4lBuBB2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9305	. f 0T	f b9
mgb3f Xoga0aB4G4Bv2aBuv4lBuBB2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	930l	690T	f 33
mgb3f Xoga0aB4G4242aBuv4lBuBB2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	f Tf	. b0T	f 3p
mgb3f Xoga0aB4G4lG2aBuv4lBuBB2 (gr WGMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9509	650T	f pp
mgb3f Xoga0aB4G4laIGu2aBuv4lBuBB2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	T06b5 µ: /t	9. 0p	. f 0T	f 3b
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S039Ff f)								
mgb3f Xoga0aB4G4yBluv4lBuBB2 (gr BV)	3. 5-bb-p	T0f	µ: /t	<T0f	f 0b5 µ: /t	9905	. 30T	f b9
mgb3f Xoga0aB4G47avluv4lBuBB2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9305	. b0T	f b9
mgb3f Xoga0aB4G4haxuv4lBuBB2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9509	. b0T	f b9
mgb3f Xoga0aB4G4ha7luv4lBuBB2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9. 0T	. b0T	f 3T
mgb3f Xoga0aB4G44Bluv4lBuBB2 (gr OV)	335-6. -f	T0Tf	µ: /t	<T0Tf	T0b5 µ: /t	9b05	. f 0T	f 33
mgb3f Xoga0aB4G4v4vuv4lBuBB2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	950p	690T	f 3T
mgb3f Xoga0aB4G42aBuv4lBuBB2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	930b	. f 0T	f b9
mgb3f Xoga0aB4G4Bv2aBuv4lBuBB2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	f TT	690T	f 33
mgb3f Xoga0aB4G4242aBuv4lBuBB2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9f 0	. b0T	f 3p
mgb3f Xoga0aB4G4lG2aBuv4lBuBB2 (gr WGMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	1603	650T	f pp
mgb3f Xoga0aB4G4laIGu2aBuv4lBuBB2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	T06b5 µ: /t	950T	. f 0T	f 3b
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S039S28)								
mgb3f Xoga0aB4G4yBluv4lBuBB2 (gr BV)	3. 5-bb-p	T0f	µ: /t	<T0f	f 0b5 µ: /t	9503	. 30T	f b9
mgb3f Xoga0aB4G47avluv4lBuBB2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	110	. b0T	f b9
mgb3f Xoga0aB4G4haxuv4lBuBB2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9b0b	. b0T	f b9

RBy-c ulCx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234B: Perla(oroyakcaCyrboxcas6 A6udn @CLoi: S039S28) - 6o5iu5(ed								
mgb3f XogaCaB4G4ha7luv4lBuBl2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9f 06	. b0T	f 3T
mgb3f XogaCaB4G44Bluv4lBuBl2 (gr OV)	335-6. -f	T0Tf	µ: /t	<T0Tf	T0b5 µ: /t	9T0T	. f 0T	f 33
mgb3f XogaCaB4G4v4vuv4lBuBl2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9b0T	690T	f 3T
mgb3f XogaCaB4G42aBuv4lBuBl2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	130b	. f 0T	f b9
mgb3f XogaCaB4G4Bv2aBuv4lBuBl2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9T05	690T	f 33
mgb3f XogaCaB4G4242aBuv4lBuBl2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	1. 0l	. b0T	f 3p
mgb3f XogaCaB4G4lG2aBuv4lBuBl2 (gr WOMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	1p0	650T	f pp
mgb3f XogaCaB4G4laIGu2aBuv4lBuBl2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	T06b5 µ: /t	9603	. f 0T	f 3b
EP234B: Perla(oroyakcaCyrboxcas6 A6udn @CLoi: S039S2f)								
mgb3f XogaCaB4G4yBluv4lBuBl2 (gr BV)	3. 5-bb-p	T0f	µ: /t	<T0f	f 0b5 µ: /t	f T3	. 30T	f b9
mgb3f XogaCaB4G47avluv4lBuBl2 (gr gaV)	b. T6-9T-3	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9f 0T	. b0T	f b9
mgb3f XogaCaB4G4haxuv4lBuBl2 (gr SxV)	3T. -bp-p	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	1. 0T	. b0T	f b9
mgb3f XogaCaB4G4ha7luv4lBuBl2 (gr S7V)	3. 5-15-9	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	110T	. b0T	f 3T
mgb3f XogaCaB4G44Bluv4lBuBl2 (gr OV)	335-6. -f	T0Tf	µ: /t	<T0Tf	T0b5 µ: /t	190f	. f 0T	f 33
mgb3f XogaCaB4G4v4vuv4lBuBl2 (gr NV)	3. 5-95-f	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9T0l	690T	f 3T
mgb3f XogaCaB4G42aBuv4lBuBl2 (gr MV)	335-. 6-b	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	150b	. f 0T	f b9
mgb3f XogaCaB4G4Bv2aBuv4lBuBl2 (gr UvMV)	bT51-9p-1	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9609	690T	f 33
mgb3f XogaCaB4G4242aBuv4lBuBl2 (gr M4MV)	3T. -55-f	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9305	. b0T	f 3p
mgb3f XogaCaB4G4lG2aBuv4lBuBl2 (gr WOMV)	. b6b9-9p-1	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	1. 05	650T	f pp
mgb3f XogaCaB4G4laIGu2aBuv4lBuBl2 (gr WaMV)	3. 6-T6-.	T0T5	µ: /t	<T0T5	T06b5 µ: /t	990p	. f 0T	f 3b
EP234C: Perla(oroyakcas(alo5yDuden @CLoi: S039Ff 8)								
mgb3f XogaCaB4G44Bluva PBa4vus l2a (r ORV)	. 5p-9f -6	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9T09	6. 0T	f 3.
mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l2a (c ar ORV)	3f 5T6-3b-1	T0T5	µ: /t	<T0T5	T06b5 µ: /t	f b1	610T	f pf
mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l2a (mlr ORV)	pf 5f -5T-b	T0T5	µ: /t	<T0T5	T06b5 µ: /t	f Tp	. T0T	f 3T
mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l24alhuv4e (c ar ORm)	bppp1-T9-.	T0T5	µ: /t	<T0T5	T06b5 µ: /t	990T	. T0T	f 3T
mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l24alhuv4e (mlr ORm)	f 69f -99-b	T0T5	µ: /t	<T0T5	T06b5 µ: /t	f Tp	. T0T	f 3T
mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l24uBalBuBl2 (c ar ORVV)	b355-3f -9	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9p05	650T	f 36
mgb3f XoN-mlhi e7aCaB4G44Bluva PBa4vus l24uBalBuBl2 (mlr ORVV)	b99f -5T-6	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9p0T	6f 0T	f 35
EP234C: Perla(oroyakcas(alo5yDuden @CLoi: S039Ff f)								
mgb3f XogaCaB4G44Bluva PBa4vus l2a (r ORV)	. 5p-9f -6	T0Tb	µ: /t	<T0Tb	T0b5 µ: /t	9f 06	6. 0T	f 3.
mgb3f XoN-c alhi e7aCaB4G44Bluva PBa4vus l2a (c ar ORV)	3f 5T6-3b-1	T0T5	µ: /t	<T0T5	T06b5 µ: /t	f T3	610T	f pf

RBy-c ulCx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234C: Perla(oroyakcas(ao5yDuden @CLoi: S039Ff f) - 6o5iu5(ed								
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E2a (mr ORV)	pf 5f -5T-b	T0r5	µ: /t	<T0r5	T06b5 µ: /t	f TT	. T0r	f 3T
mgb3f XoN-c alhi e7aCeB4G4Bluva PBe4vus E24alhuv4e (c ar ORm)	bppp1-T9-.	T0r5	µ: /t	<T0r5	T06b5 µ: /t	f Tf	. T0r	f 3T
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E24alhuv4e (mr ORm)	f 69f -99-b	T0r5	µ: /t	<T0r5	T06b5 µ: /t	9606	. T0r	f 3T
mgb3f XoN-c alhi e7aCeB4G4Bluva PBe4vus E24uBalBuBE2 (c ar ORVV)	b355-3f -9	T0rb	µ: /t	<T0rb	T0b5 µ: /t	f TT	650r	f 36
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E24uBalBuBE2 (mr ORVV)	b99f -5T-6	T0rb	µ: /t	<T0rb	T0b5 µ: /t	9T0p	6f 0r	f 35
EP234C: Perla(oroyakcas(ao5yDuden @CLoi: S039S28)								
mgb3f XogaCeB4G4Bluva PBe4vus E2a (r ORV)	. 5p-9f -6	T0rb	µ: /t	<T0rb	T0b5 µ: /t	930p	6. 0r	f 3.
mgb3f XoN-c alhi e7aCeB4G4Bluva PBe4vus E2a (c ar ORV)	3f 5T6-3b-1	T0r5	µ: /t	<T0r5	T06b5 µ: /t	f T.	610r	f pf
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E2a (mr ORV)	pf 5f -5T-b	T0r5	µ: /t	<T0r5	T06b5 µ: /t	f T1	. T0r	f 3T
mgb3f XoN-c alhi e7aCeB4G4Bluva PBe4vus E24alhuv4e (c ar ORm)	bppp1-T9-.	T0r5	µ: /t	<T0r5	T06b5 µ: /t	9f 0	. T0r	f 3T
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E24alhuv4e (mr ORm)	f 69f -99-b	T0r5	µ: /t	<T0r5	T06b5 µ: /t	f Tf	. T0r	f 3T
mgb3f XoN-c alhi e7aCeB4G4Bluva PBe4vus E24uBalBuBE2 (c ar ORVV)	b355-3f -9	T0rb	µ: /t	<T0rb	T0b5 µ: /t	9. 0	650r	f 36
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E24uBalBuBE2 (mr ORVV)	b99f -5T-6	T0rb	µ: /t	<T0rb	T0b5 µ: /t	190	6f 0r	f 35
EP234C: Perla(oroyakcas(ao5yDuden @CLoi: S039S2f)								
mgb3f XogaCeB4G4Bluva PBe4vus E2a (r ORV)	. 5p-9f -6	T0rb	µ: /t	<T0rb	T0b5 µ: /t	9T05	6. 0r	f 3.
mgb3f XoN-c alhi e7aCeB4G4Bluva PBe4vus E2a (c ar ORV)	3f 5T6-3b-1	T0r5	µ: /t	<T0r5	T06b5 µ: /t	950l	610r	f pf
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E2a (mr ORV)	pf 5f -5T-b	T0r5	µ: /t	<T0r5	T06b5 µ: /t	9303	. T0r	f 3T
mgb3f XoN-c alhi e7aCeB4G4Bluva PBe4vus E24alhuv4e (c ar ORm)	bppp1-T9-.	T0r5	µ: /t	<T0r5	T06b5 µ: /t	9509	. T0r	f 3T
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E24alhuv4e (mr ORm)	f 69f -99-b	T0r5	µ: /t	<T0r5	T06b5 µ: /t	9f 0r	. T0r	f 3T
mgb3f XoN-c alhi e7aCeB4G4Bluva PBe4vus E24uBalBuBE2 (c ar ORVV)	b355-3f -9	T0rb	µ: /t	<T0rb	T0b5 µ: /t	910	650r	f 36
mgb3f XoN-mhi e7aCeB4G4Bluva PBe4vus E24uBalBuBE2 (mr ORVV)	b99f -5T-6	T0rb	µ: /t	<T0rb	T0b5 µ: /t	f Tb	6f 0r	f 35
EP234t : @:2) ma(oroieaoDer s(ao5u6 A6udn @CLoi: S039Ff 8)								
mgb3f Xopdo r eB4G4laa4s aCPBe4vEBuBE2 (pdo r WR)	. 5. f bp-. b-p	T0r5	µ: /t	<T0r5	T0b3p µ: /t	f Tf	630r	f p3
mgb3f Xo6do r eB4G4laa4s aCPBe4vEBuBE2 (6do r WR)	b. 6f 9-9. -b	T0r5	µ: /t	<T0r5	T0b31 µ: /t	9. 05	6p0r	f pT
mgb3f Xo1do r eB4G4laa4s aCPBe4vEBuBE2 (1do r WR)	39f T1-3p-p	T0r5	µ: /t	<T0r5	T0bp µ: /t	f f 3	6. 0r	f 31
mgb3f Xof Tdo r eB4G4laa4s aCPBe4vEBuBE2 (f Tdo r WR)	f bTbb6-6T-T	T0r5	µ: /t	<T0r5	T0bpb µ: /t	1b0	. T0r	f 3T

RBy-c ulGx: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234t : @:2) ma(oroieaoD er s(alo5u6 A6udn @CLoi: S039Ff f)								
mgb3f Xopdo r eB4G4laa4s aCPBa4vtB uBt2 (pdo r WR)	. 5. f bp-. b-p	T0f5	µ: /t	<T0f5	T0b3p µ: /t	f T3	630f	f p3
mgb3f Xo6do r eB4G4laa4s aCPBa4vtB uBt2 (6do r WR)	b. 6f 9-9. -b	T0f5	µ: /t	<T0f5	T0b31 µ: /t	f TT	6p0f	f pT
mgb3f Xo1do r eB4G4laa4s aCPBa4vtB uBt2 (1do r WR)	39f T1-3p-p	T0f5	µ: /t	<T0f5	T0bp µ: /t	f T3	6. 0f	f 31
mgb3f Xof Tdo r eB4G4laa4s aCPBa4vtB uBt2 (f Tdo r WR)	f bTbb6-6T-T	T0f5	µ: /t	<T0f5	T0bpb µ: /t	9p0f	. T0f	f 3T
EP234t : @:2) ma(oroieaoD er s(alo5u6 A6udn @CLoi: S039S28)								
mgb3f Xopdo r eB4G4laa4s aCPBa4vtB uBt2 (pdo r WR)	. 5. f bp-. b-p	T0f5	µ: /t	<T0f5	T0b3p µ: /t	9. 0f	630f	f p3
mgb3f Xo6do r eB4G4laa4s aCPBa4vtB uBt2 (6do r WR)	b. 6f 9-9. -b	T0f5	µ: /t	<T0f5	T0b31 µ: /t	930b	6p0f	f pT
mgb3f Xo1do r eB4G4laa4s aCPBa4vtB uBt2 (1do r WR)	39f T1-3p-p	T0f5	µ: /t	<T0f5	T0bp µ: /t	950f5	6. 0f	f 31
mgb3f Xof Tdo r eB4G4laa4s aCPBa4vtB uBt2 (f Tdo r WR)	f bTbb6-6T-T	T0f5	µ: /t	<T0f5	T0bpb µ: /t	1b0	. T0f	f 3T
EP234t : @:2) ma(oroieaoD er s(alo5u6 A6udn @CLoi: S039S2f)								
mgb3f Xopdo r eB4G4laa4s aCPBa4vtB uBt2 (pdo r WR)	. 5. f bp-. b-p	T0f5	µ: /t	<T0f5	T0b3p µ: /t	9. 0	630f	f p3
mgb3f Xo6do r eB4G4laa4s aCPBa4vtB uBt2 (6do r WR)	b. 6f 9-9. -b	T0f5	µ: /t	<T0f5	T0b31 µ: /t	9f 0l	6p0f	f pT
mgb3f Xo1do r eB4G4laa4s aCPBa4vtB uBt2 (1do r WR)	39f T1-3p-p	T0f5	µ: /t	<T0f5	T0bp µ: /t	9. 05	6. 0f	f 31
mgb3f Xof Tdo r eB4G4laa4s aCPBa4vtB uBt2 (f Tdo r WR)	f bTbb6-6T-T	T0f5	µ: /t	<T0f5	T0bpb µ: /t	1. 0l	. T0f	f 3T
EP234P: PmAs s(Dn @CLoi: S039Ff 8)								
mgb3f XoRBs 4Lgr VR	----	T0ff	µ: /t	<T0ff	----	----	----	----
mgb3f XoRBs 4Lgr SxR uv2 gr OR	355-p6-p/f . 63-b3-f	T0ff	µ: /t	<T0ff	----	----	----	----
mgb3f XoRBs 4Lgr VR (H V MmF t tE1)	----	T0ff	µ: /t	<T0ff	----	----	----	----
EP234P: PmAs s(Dn @CLoi: S039Fff)								
mgb3f XoRBs 4Lgr VR	----	T0ff	µ: /t	<T0ff	----	----	----	----
mgb3f XoRBs 4Lgr SxR uv2 gr OR	355-p6-p/f . 63-b3-f	T0ff	µ: /t	<T0ff	----	----	----	----
mgb3f XoRBs 4Lgr VR (H V MmF t tE1)	----	T0ff	µ: /t	<T0ff	----	----	----	----
EP234P: PmAs s(Dn @CLoi: S039S28)								
mgb3f XoRBs 4Lgr VR	----	T0ff	µ: /t	<T0ff	----	----	----	----
mgb3f XoRBs 4Lgr SxR uv2 gr OR	355-p6-p/f . 63-b3-f	T0ff	µ: /t	<T0ff	----	----	----	----
mgb3f XoRBs 4Lgr VR (H V MmF t tE1)	----	T0ff	µ: /t	<T0ff	----	----	----	----
EP234P: PmAs s(Dn @CLoi: S039S2f)								
mgb3f XoRBs 4Lgr VR	----	T0ff	µ: /t	<T0ff	----	----	----	----
mgb3f XoRBs 4Lgr SxR uv2 gr OR	355-p6-p/f . 63-b3-f	T0ff	µ: /t	<T0ff	----	----	----	----
mgb3f XoRBs 4Lgr VR (H V MmF t tE1)	----	T0ff	µ: /t	<T0ff	----	----	----	----

Matrix Spike (MS) Report

Wha qBueEi B4vlC4e laCs c ulCx R7Eëa (c R) CalaCP l4 uv ExlCueuy4Cul4C P7ëE Pus 7ea P7Eëa2 wEh u Ca7CaPavlulEDa Pal 4L luC al uvuelaP0 Wha 7BC74Pa 4L lhEP Qn 7uCus alaC EP l4 s 4vlE4C 74lavlEue s ulCx aLlaBlP 4v uvuelaCaB4DaCëaP0RlulEB FaB4DaC t ës EEP uP 7aCeuy4Cul4C Mulu QBueEi OyjaBlEDaP(MQOP)0l2aueCaB4DaC Cuv: aPPlula2 s ui ya wulEDa2 Ex lha aDavl 4LPus 7ea s ulCx ExlaCaCavBa0

RBy-c ulCx: **s OIL**

				Matrix Spike (MS) Report			
				Spike	*SpikeRecovery(%)*	*Acceptable Limits (%)*	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: Perla(oroyakcas(alo5u6 A6udn @CLoi: S03899f)							
mc b3T1TT9-TTb	Vv4vi s 4BP	mgb3f XogaCaB4C4yBluva PBa4vlBuBE2 (gr BR)	3. 5-. 3-5	T0TTf f f s : /d:	. 60f	. b0T	f b1
		mgb3f XogaCaB4C47avluva PBa4vlBuBE2 (gr gaR)	b. T6-9f -p	T0TTf f 1 s : /d:	. 506	. 30T	f b3
		mgb3f XogaCaB4C4haxuva PBa4vlBuBE2 (gr SxR)	355-p6-p	T0TTf f p s : /d:	150p	6. 0T	f 3T
		mgb3f XogaCaB4C4ha7luva PBa4vlBuBE2 (gr S7R)	3. 5-9b-1	T0TTf f 9 s : /d:	1p03	. T0T	f 3b
		mgb3f XogaCaB4C44Bluva PBa4vlBuBE2 (gr OR)	f . 63-b3-f	T0TTf f 6 s : /d:	# pf 0p	610T	f 36
		mgb3f XogaCaB4C42aBuva PBa4vlBuBE2 (gr MR)	335-. . -3	T0TTf bf s : /d:	. 606	590T	f 3p
EP234B: Perla(oroyakcaCyrboxcas6 A6udn @CLoi: S03899f)							
mc b3T1TT9-TTb	Vv4vi s 4BP	mgb3f XogaCaB4C4yBluv4lBuBE2 (gr BV)	3. 5-bb-p	T0TT6b5 s : /d:	# 610b	. f 0T	f 35
		mgb3f XogaCaB4C47avluv4lBuBE2 (gr gaV)	b. T6-9T-3	T0TTf b5 s : /d:	9T0b	690T	f 3b
		mgb3f XogaCaB4C4haxuv4lBuBE2 (gr SxV)	3T. -bp-p	T0TTf b5 s : /d:	1b0	. T0T	f 3b
		mgb3f XogaCaB4C4ha7luv4lBuBE2 (gr S7V)	3. 5-15-9	T0TTf b5 s : /d:	1f 0T	. f 0T	f 3f
		mgb3f XogaCaB4C44Bluv4lBuBE2 (gr OV)	335-6. -f	T0TTf b5 s : /d:	1b09	690T	f 33
		mgb3f XogaCaB4C4v4vuv4lBuBE2 (gr NV)	3. 5-95-f	T0TTf b5 s : /d:	1T0l	. b0T	f b9
		mgb3f XogaCaB4C42aBuv4lBuBE2 (gr MV)	335-. 6-b	T0TTf b5 s : /d:	130f	690T	f 33
		mgb3f XogaCaB4C4Bv2aBuv4lBuBE2 (gr UvMV)	bT51-9p-1	T0TTf b5 s : /d:	. 905	6p0T	f 36
		mgb3f XogaCaB4C4242aBuv4lBuBE2 (gr M4MV)	3T. -55-f	T0TTf b5 s : /d:	1b0b	690T	f 35
		mgb3f XogaCaB4C4lCE2aBuv4lBuBE2 (gr W0MV)	. b6b9-9p-1	T0TTf b5 s : /d:	150l	660T	f 39
		mgb3f XogaCaB4C4laIGu2aBuv4lBuBE2 (gr WaMV)	3. 6-T6-.	T0TT3f b s : /d:	. 90T	690T	f 33
EP234C: Perla(oroyakcas(alo5yD uden @CLoi: S03899f)							
mc b3T1TT9-TTb	Vv4vi s 4BP	mgb3f XogaCaB4C44Bluva PBa4vus E2a (r ORV)	. 5p-9f -6	T0TTf b5 s : /d:	. 60p	6. 0T	f 3.
		mgb3f XoN-c alhi e7aCaB4C44Bluva PBa4vus E2a (c ar ORV)	3f 5T6-3b-1	T0TT3f b s : /d:	. . 0p	. T0T	f 3T
		mgb3f XoN-mlhi e7aCaB4C44Bluva PBa4vus E2a (mlr ORV)	pf 5f -5T-b	T0TT3f b s : /d:	# 610	. T0T	f 3T
		mgb3f XoN-c alhi e7aCaB4C44Bluva PBa4vus E24alhuv4e (c ar ORm)	bppp1-T9-.	T0TT3f b s : /d:	. p0p	. T0T	f 3T
		mgb3f XoN-mlhi e7aCaB4C44Bluva PBa4vus E24alhuv4e (mlr ORm)	f 69f -99-b	T0TT3f b s : /d:	. 906	. T0T	f 3T
		mgb3f XoN-c alhi e7aCaB4C44Bluva PBa4vus E24uBalBuBE2 (c ar ORVV)	b355-3f -9	T0TTf b5 s : /d:	. 90l	630T	f pp
		mgb3f XoN-mlhi e7aCaB4C44Bluva PBa4vus E24uBalBuBE2 (mlr ORVV)	b99f -5T-6	T0TTf b5 s : /d:	# 5p0p	6f 0T	f 39
EP234t : @:2) ma(oroieaoDer s(alo5u6 A6udn @CLoi: S03899f)							
mc b3T1TT9-TTb	Vv4vi s 4BP	mgb3f Xopdo r eB4C4lae4s aCPBa4vlBuBE2 (pdo r WR)	. 5. f bp-. b-p	T0TTf f . s : /d:	1b09	6b0T	f p5
		mgb3f Xo6do r eB4C4lae4s aCPBa4vlBuBE2 (6do r WR)	b. 6f 9-9. -b	T0TTf f 9 s : /d:	190b	6p0T	f pT

gu: a o f 1 4Lbb
H 4Gl OC2aC o mc b3T1Tf 5 Vs av2s avl f
n e5avl o RWWNWm VURWF Vt IV gWY t WM
g G4jaBl o 8 In _Tpp5_gr VROc g_b3

RBy-c ulC5x: **s OIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234t : @:2) ma(oroieaoDer s (ao5u6 A6udn @CLoi: S03899f) - 6o5iu5(ed							
mc b3T1TT9-TTb	Vv4vi s 4BP	mgb3f Xo1do r eB4G4lae4s aCPBe4vIBuBI2 (1do r WR)	39f T1-3p-p	T0TTf b s : /d:	. p0o	650T	f 3.
		mgb3f Xof Tdo r eB4G4lae4s aCPBe4vIBuBI2 (f Tdo r WR)	f bTbb6-6T-T	T0TTf bf s : /d:	# 5105	. T0T	f 3T

RBy-c ulC5x: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: Perla(oroyakcas (ao5u6 A6udn @CLoi: S039Ff 8)							
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mgb3f XogaCeB4G4yBluva PBe4vIBuBI2 (gr BR)	3. 5-. 3-5	T0bbb µ: /t	# N4l MalaGs Eva2	. b0T	f 3T
		mgb3f XogaCeB4G47avluva PBe4vIBuBI2 (gr gaR)	b. T6-9f -p	T0b35 µ: /t	# N4l MalaGs Eva2	. f 0T	f b.
		mgb3f XogaCeB4G4haxuva PBe4vIBuBI2 (gr SxR)	355-p6-p	T0bb1 µ: /t	# N4l MalaGs Eva2	610T	f 3f
		mgb3f XogaCeB4G4ha7luva PBe4vIBuBI2 (gr S7R)	3. 5-9b-1	T0b31 µ: /t	f T6	690T	f 3p
		mgb3f XogaCeB4G44Bluva PBe4vIBuBI2 (gr OR)	f . 63-b3-f	T0b3b µ: /t	# N4l MalaGs Eva2	650T	f pT
		mgb3f XogaCeB4G42aBuva PBe4vIBuBI2 (gr MR)	335-. . -3	T0bpf µ: /t	f bT	530T	f pb
EP234A: Perla(oroyakcas (ao5u6 A6udn @CLoi: S039Ff f)							
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mgb3f XogaCeB4G4yBluva PBe4vIBuBI2 (gr BR)	3. 5-. 3-5	T0bbb µ: /t	f Tb	. b0T	f 3T
		mgb3f XogaCeB4G47avluva PBe4vIBuBI2 (gr gaR)	b. T6-9f -p	T0b35 µ: /t	9309	. f 0T	f b.
		mgb3f XogaCeB4G4haxuva PBe4vIBuBI2 (gr SxR)	355-p6-p	T0bb1 µ: /t	9T0f	610T	f 3f
		mgb3f XogaCeB4G4ha7luva PBe4vIBuBI2 (gr S7R)	3. 5-9b-1	T0b31 µ: /t	1101	690T	f 3p
		mgb3f XogaCeB4G44Bluva PBe4vIBuBI2 (gr OR)	f . 63-b3-f	T0b3b µ: /t	f T1	650T	f pT
		mgb3f XogaCeB4G42aBuva PBe4vIBuBI2 (gr MR)	335-. . -3	T0bpf µ: /t	5. 05	530T	f pb
EP234A: Perla(oroyakcas (ao5u6 A6udn @CLoi: S039S28)							
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mgb3f XogaCeB4G4yBluva PBe4vIBuBI2 (gr BR)	3. 5-. 3-5	T0bbb µ: /t	1903	. b0T	f 3T
		mgb3f XogaCeB4G47avluva PBe4vIBuBI2 (gr gaR)	b. T6-9f -p	T0b35 µ: /t	f TT	. f 0T	f b.
		mgb3f XogaCeB4G4haxuva PBe4vIBuBI2 (gr SxR)	355-p6-p	T0bb1 µ: /t	1903	610T	f 3f
		mgb3f XogaCeB4G4ha7luva PBe4vIBuBI2 (gr S7R)	3. 5-9b-1	T0b31 µ: /t	f T.	690T	f 3p
		mgb3f XogaCeB4G44Bluva PBe4vIBuBI2 (gr OR)	f . 63-b3-f	T0b3b µ: /t	9b05	650T	f pT
		mgb3f XogaCeB4G42aBuva PBe4vIBuBI2 (gr MR)	335-. . -3	T0bpf µ: /t	1. 0T	530T	f pb
EP234A: Perla(oroyakcas (ao5u6 A6udn @CLoi: S039S2f)							
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mgb3f XogaCeB4G4yBluva PBe4vIBuBI2 (gr BR)	3. 5-. 3-5	T0bbb µ: /t	1303	. b0T	f 3T
		mgb3f XogaCeB4G47avluva PBe4vIBuBI2 (gr gaR)	b. T6-9f -p	T0b35 µ: /t	9b01	. f 0T	f b.
		mgb3f XogaCeB4G4haxuva PBe4vIBuBI2 (gr SxR)	355-p6-p	T0bb1 µ: /t	9T01	610T	f 3f
		mgb3f XogaCeB4G4ha7luva PBe4vIBuBI2 (gr S7R)	3. 5-9b-1	T0b31 µ: /t	9903	690T	f 3p
		mgb3f XogaCeB4G44Bluva PBe4vIBuBI2 (gr OR)	f . 63-b3-f	T0b3b µ: /t	1p01	650T	f pT
		mgb3f XogaCeB4G42aBuva PBe4vIBuBI2 (gr MR)	335-. . -3	T0bpf µ: /t	. 906	530T	f pb

RBy-c ulG5x: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S039Ff 8)							
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mgb3f XogaCe84G4yBluv4IBuBI2 (gr BV)	3. 5-bb-p	f 0b5 µ: /t	1501	. 30T	f b9
		mgb3f XogaCe84G47avIuv4IBuBI2 (gr gaV)	b. T6-9T-3	T0b5 µ: /t	. 609	. b0T	f b9
		mgb3f XogaCe84G4haxuv4IBuBI2 (gr SxV)	3T. -bp-p	T0b5 µ: /t	# N4l MalaGs Eva2	. b0T	f b9
		mgb3f XogaCe84G4ha7Iuv4IBuBI2 (gr S7V)	3. 5-15-9	T0b5 µ: /t	f Tf	. b0T	f 3T
		mgb3f XogaCe84G44BIuv4IBuBI2 (gr OV)	335-6. -f	T0b5 µ: /t	# N4l MalaGs Eva2	. f 0T	f 33
		mgb3f XogaCe84G4v4vuv4IBuBI2 (gr NV)	3. 5-95-f	T0b5 µ: /t	1. 06	690T	f 3T
		mgb3f XogaCe84G42aBuv4IBuBI2 (gr MV)	335-. 6-b	T0b5 µ: /t	1103	. f 0T	f b9
		mgb3f XogaCe84G4Bv2aBuv4IBuBI2 (gr UvMV)	bT51-9p-1	T0b5 µ: /t	9b05	690T	f 33
		mgb3f XogaCe84G4242aBuv4IBuBI2 (gr M4MV)	3T. -55-f	T0b5 µ: /t	9. 0p	. b0T	f 3p
		mgb3f XogaCe84G4lG2aBuv4IBuBI2 (gr WGMV)	. b6b9-9p-1	T0b5 µ: /t	9T0l	650T	f pp
		mgb3f XogaCe84G4laIGu2aBuv4IBuBI2 (gr WaMV)	3. 6-T6-.	T06b5 µ: /t	1103	. f 0T	f 3b
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S039Ff f)							
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mgb3f XogaCe84G4yBluv4IBuBI2 (gr BV)	3. 5-bb-p	f 0b5 µ: /t	f Tf	. 30T	f b9
		mgb3f XogaCe84G47avIuv4IBuBI2 (gr gaV)	b. T6-9T-3	T0b5 µ: /t	9b05	. b0T	f b9
		mgb3f XogaCe84G4haxuv4IBuBI2 (gr SxV)	3T. -bp-p	T0b5 µ: /t	1p0	. b0T	f b9
		mgb3f XogaCe84G4ha7Iuv4IBuBI2 (gr S7V)	3. 5-15-9	T0b5 µ: /t	9b0T	. b0T	f 3T
		mgb3f XogaCe84G44BIuv4IBuBI2 (gr OV)	335-6. -f	T0b5 µ: /t	9b01	. f 0T	f 33
		mgb3f XogaCe84G4v4vuv4IBuBI2 (gr NV)	3. 5-95-f	T0b5 µ: /t	9309	690T	f 3T
		mgb3f XogaCe84G42aBuv4IBuBI2 (gr MV)	335-. 6-b	T0b5 µ: /t	930	. f 0T	f b9
		mgb3f XogaCe84G4Bv2aBuv4IBuBI2 (gr UvMV)	bT51-9p-1	T0b5 µ: /t	9103	690T	f 33
		mgb3f XogaCe84G4242aBuv4IBuBI2 (gr M4MV)	3T. -55-f	T0b5 µ: /t	f f T	. b0T	f 3p
		mgb3f XogaCe84G4lG2aBuv4IBuBI2 (gr WGMV)	. b6b9-9p-1	T0b5 µ: /t	. 105	650T	f pp
		mgb3f XogaCe84G4laIGu2aBuv4IBuBI2 (gr WaMV)	3. 6-T6-.	T06b5 µ: /t	f f b	. f 0T	f 3b
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S039S28)							
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mgb3f XogaCe84G4yBluv4IBuBI2 (gr BV)	3. 5-bb-p	f 0b5 µ: /t	. p03	. 30T	f b9
		mgb3f XogaCe84G47avIuv4IBuBI2 (gr gaV)	b. T6-9T-3	T0b5 µ: /t	1. 05	. b0T	f b9
		mgb3f XogaCe84G4haxuv4IBuBI2 (gr SxV)	3T. -bp-p	T0b5 µ: /t	110p	. b0T	f b9
		mgb3f XogaCe84G4ha7Iuv4IBuBI2 (gr S7V)	3. 5-15-9	T0b5 µ: /t	190	. b0T	f 3T
		mgb3f XogaCe84G44BIuv4IBuBI2 (gr OV)	335-6. -f	T0b5 µ: /t	1. 06	. f 0T	f 33
		mgb3f XogaCe84G4v4vuv4IBuBI2 (gr NV)	3. 5-95-f	T0b5 µ: /t	9T09	690T	f 3T
		mgb3f XogaCe84G42aBuv4IBuBI2 (gr MV)	335-. 6-b	T0b5 µ: /t	1601	. f 0T	f b9
		mgb3f XogaCe84G4Bv2aBuv4IBuBI2 (gr UvMV)	bT51-9p-1	T0b5 µ: /t	9f 0p	690T	f 33
		mgb3f XogaCe84G4242aBuv4IBuBI2 (gr M4MV)	3T. -55-f	T0b5 µ: /t	1p0T	. b0T	f 3p
		mgb3f XogaCe84G4lG2aBuv4IBuBI2 (gr WGMV)	. b6b9-9p-1	T0b5 µ: /t	. 10T	650T	f pp
		mgb3f XogaCe84G4laIGu2aBuv4IBuBI2 (gr WaMV)	3. 6-T6-.	T06b5 µ: /t	1b0p	. f 0T	f 3b
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S039S2f)							

RBy-c ulC5x: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234B: Perla(oroyakcaCyrboxca6 A6udn @CLoi: S039S2f) - 6o5iu5(ed							
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mgb3f Xoga0eB4G4yBluv4fB uBf2 (gr BV)	3. 5-bb-p	f 0b5 µ: /t	. . 03	. 30T	f b9
		mgb3f Xoga0eB4G47avluv4fB uBf2 (gr gaV)	b. T6-9T-3	T0b5 µ: /t	160p	. b0T	f b9
		mgb3f Xoga0eB4G4haxuv4fB uBf2 (gr SxV)	3T. -bp-p	T0b5 µ: /t	1T06	. b0T	f b9
		mgb3f Xoga0eB4G4ha7luv4fB uBf2 (gr S7V)	3. 5-15-9	T0b5 µ: /t	150b	. b0T	f 3T
		mgb3f Xoga0eB4G44Bluv4fB uBf2 (gr OV)	335-6. -f	T0b5 µ: /t	9T05	. f 0T	f 33
		mgb3f Xoga0eB4G4v4vuv4fB uBf2 (gr NV)	3. 5-95-f	T0b5 µ: /t	9T09	690T	f 3T
		mgb3f Xoga0eB4G42aBuv4fB uBf2 (gr MV)	335-. 6-b	T0b5 µ: /t	1. 01	. f 0T	f b9
		mgb3f Xoga0eB4G4Bv2aBuv4fB uBf2 (gr UvMV)	bT51-9p-1	T0b5 µ: /t	1p0T	690T	f 33
		mgb3f Xoga0eB4G4242aBuv4fB uBf2 (gr M4MV)	3T. -55-f	T0b5 µ: /t	. 90p	. b0T	f 3p
		mgb3f Xoga0eB4G4lC2aBuv4fB uBf2 (gr W0MV)	. b6b9-9p-1	T0b5 µ: /t	. f 09	650T	f pp
		mgb3f Xoga0eB4G4lalG2aBuv4fB uBf2 (gr WaMV)	3. 6-T6-.	T06b5 µ: /t	1506	. f 0T	f 3b
EP234C: Perla(oroyakcas(do5yD uden @CLoi: S039Ff 8)							
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mgb3f Xoga0eB4G44Bluva PBe4vus f2a (r ORV)	. 5p-9f -6	T0b5 µ: /t	9f 0b	6. 0T	f 3.
		mgb3f XoN-c alhi e7a0eB4G44Bluva PBe4vus f2a (c ar ORV)	3f 5T6-3b-1	T06b5 µ: /t	9105	610T	f pf
		mgb3f XoN-mlhi e7a0eB4G44Bluva PBe4vus f2a (mlr ORV)	pf 5f -5T-b	T06b5 µ: /t	. . 05	. T0T	f 3T
		mgb3f XoN-c alhi e7a0eB4G44Bluva PBe4vus f24alhuv4e (c ar ORm)	bppp1-T9-.	T06b5 µ: /t	160b	. T0T	f 3T
		mgb3f XoN-mlhi e7a0eB4G44Bluva PBe4vus f24alhuv4e (mlr ORm)	f 69f -99-b	T06b5 µ: /t	150T	. T0T	f 3T
		mgb3f XoN-c alhi e7a0eB4G44Bluva PBe4vus f24uBalfB uBf2 (c ar ORVV)	b355-3f -9	T0b5 µ: /t	1. 05	650T	f 36
		mgb3f XoN-mlhi e7a0eB4G44Bluva PBe4vus f24uBalfB uBf2 (mlr ORVV)	b99f -5T-6	T0b5 µ: /t	f Tf	6f 0T	f 35
EP234C: Perla(oroyakcas(do5yD uden @CLoi: S039Ff f)							
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mgb3f Xoga0eB4G44Bluva PBe4vus f2a (r ORV)	. 5p-9f -6	T0b5 µ: /t	190T	6. 0T	f 3.
		mgb3f XoN-c alhi e7a0eB4G44Bluva PBe4vus f2a (c ar ORV)	3f 5T6-3b-1	T06b5 µ: /t	f Tf	610T	f pf
		mgb3f XoN-mlhi e7a0eB4G44Bluva PBe4vus f2a (mlr ORV)	pf 5f -5T-b	T06b5 µ: /t	9f 0b	. T0T	f 3T
		mgb3f XoN-c alhi e7a0eB4G44Bluva PBe4vus f24alhuv4e (c ar ORm)	bppp1-T9-.	T06b5 µ: /t	9p0	. T0T	f 3T
		mgb3f XoN-mlhi e7a0eB4G44Bluva PBe4vus f24alhuv4e (mlr ORm)	f 69f -99-b	T06b5 µ: /t	f T3	. T0T	f 3T
		mgb3f XoN-c alhi e7a0eB4G44Bluva PBe4vus f24uBalfB uBf2 (c ar ORVV)	b355-3f -9	T0b5 µ: /t	f T6	650T	f 36
		mgb3f XoN-mlhi e7a0eB4G44Bluva PBe4vus f24uBalfB uBf2 (mlr ORVV)	b99f -5T-6	T0b5 µ: /t	9T03	6f 0T	f 35
EP234C: Perla(oroyakcas(do5yD uden @CLoi: S039S28)							
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mgb3f Xoga0eB4G44Bluva PBe4vus f2a (r ORV)	. 5p-9f -6	T0b5 µ: /t	1p09	6. 0T	f 3.

RBy-c ulCx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234C: Perla(oroyakcas(ao5yDuden @CLoi: S039S28) - 6o5iu5(ed							
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E2a (c ar ORV)	3f 5T6-3b-1	T06b5 µ: /t	9f 0T	610T	f pf
		mg b3f XoN-mhi e7aCaB4C44Bluva PBe4vus E2a (mr ORV)	pf 5f -5T-b	T06b5 µ: /t	1509	. T0T	f 3T
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E24alhuv4e (c ar ORm)	bppp1-T9-.	T06b5 µ: /t	1505	. T0T	f 3T
		mg b3f XoN-mhi e7aCaB4C44Bluva PBe4vus E24alhuv4e (mr ORm)	f 69f -99-b	T06b5 µ: /t	150b	. T0T	f 3T
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E24uBalIB uBI2 (c ar ORVV)	b355-3f -9	T0b5 µ: /t	190p	650T	f 36
		mg b3f XoN-mhi e7aCaB4C44Bluva PBe4vus E24uBalIB uBI2 (mr ORVV)	b99f -5T-6	T0b5 µ: /t	1f 0	6f 0T	f 35
EP234C: Perla(oroyakcas(ao5yDuden @CLoi: S039S2f)							
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mg b3f XogaCaB4C44Bluva PBe4vus E2a (r ORV)	. 5p-9f -6	T0b5 µ: /t	1f 0f	6. 0T	f 3.
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E2a (c ar ORV)	3f 5T6-3b-1	T06b5 µ: /t	150p	610T	f pf
		mg b3f XoN-mhi e7aCaB4C44Bluva PBe4vus E2a (mr ORV)	pf 5f -5T-b	T06b5 µ: /t	. b0b	. T0T	f 3T
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E24alhuv4e (c ar ORm)	bppp1-T9-.	T06b5 µ: /t	1501	. T0T	f 3T
		mg b3f XoN-mhi e7aCaB4C44Bluva PBe4vus E24alhuv4e (mr ORm)	f 69f -99-b	T06b5 µ: /t	1506	. T0T	f 3T
		mg b3f XoN-c alhi e7aCaB4C44Bluva PBe4vus E24uBalIB uBI2 (c ar ORVV)	b355-3f -9	T0b5 µ: /t	1909	650T	f 36
		mg b3f XoN-mhi e7aCaB4C44Bluva PBe4vus E24uBalIB uBI2 (mr ORVV)	b99f -5T-6	T0b5 µ: /t	1. 0f	6f 0T	f 35
EP234t : @:2) ma(oroieaoDer s(ao5u6 A6udn @CLoi: S039Ff 8)							
mc b3T1Tf 5-Tpb	Tpp5_c H T5b_b3T5T5	mg b3f Xopdo r eB4C4lae4s aCPBe4vIBuBI2 (pdo r WR)	. 5. f bp-. b-p	T0b3p µ: /t	990b	630T	f p3
		mg b3f Xo6do r eB4C4lae4s aCPBe4vIBuBI2 (6do r WR)	b. 6f 9-9. -b	T0b31 µ: /t	960f	6p0T	f pT
		mg b3f Xo1do r eB4C4lae4s aCPBe4vIBuBI2 (1do r WR)	39f T1-3p-p	T0bp µ: /t	f Tb	6. 0T	f 31
		mg b3f Xof Tdo r eB4C4lae4s aCPBe4vIBuBI2 (f Tdo r WR)	f bTbb6-6T-T	T0bpb µ: /t	1b03	. T0T	f 3T
EP234t : @:2) ma(oroieaoDer s(ao5u6 A6udn @CLoi: S039Ff f)							
mc b3T1Tf 5-TpT	Tpp5_c H 35p_b3T5T5	mg b3f Xopdo r eB4C4lae4s aCPBe4vIBuBI2 (pdo r WR)	. 5. f bp-. b-p	T0b3p µ: /t	1901	630T	f p3
		mg b3f Xo6do r eB4C4lae4s aCPBe4vIBuBI2 (6do r WR)	b. 6f 9-9. -b	T0b31 µ: /t	9p0l	6p0T	f pT
		mg b3f Xo1do r eB4C4lae4s aCPBe4vIBuBI2 (1do r WR)	39f T1-3p-p	T0bp µ: /t	9901	6. 0T	f 31
		mg b3f Xof Tdo r eB4C4lae4s aCPBe4vIBuBI2 (f Tdo r WR)	f bTbb6-6T-T	T0bpb µ: /t	# 3f 0l	. T0T	f 3T
EP234t : @:2) ma(oroieaoDer s(ao5u6 A6udn @CLoi: S039S28)							
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mg b3f Xopdo r eB4C4lae4s aCPBe4vIBuBI2 (pdo r WR)	. 5. f bp-. b-p	T0b3p µ: /t	1601	630T	f p3
		mg b3f Xo6do r eB4C4lae4s aCPBe4vIBuBI2 (6do r WR)	b. 6f 9-9. -b	T0b31 µ: /t	190b	6p0T	f pT
		mg b3f Xo1do r eB4C4lae4s aCPBe4vIBuBI2 (1do r WR)	39f T1-3p-p	T0bp µ: /t	9303	6. 0T	f 31

RBy-c ulCEx: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234t : @:2) ma(oroieaoDer s (alo5u6 A6udn @CLoi: S039S28) - 6o5iu5(ed							
mc b3T1Tf 5-T6p	Tpp5_RH 3. 5_b3T5T5	mg b3f Xof Tdo r eB4C4lae4s aCPBe4vlEuBE2 (f Tdo r WR)	f bTbb6-6T-T	T0bpb µ: /t	1f 0p	. T0T	f 3T
EP234t : @:2) ma(oroieaoDer s (alo5u6 A6udn @CLoi: S039S2f)							
mc b3T1Tf 5-T. b	Tpp5_c H pf 6_b3T5T6	mg b3f Xopdo r eB4C4lae4s aCPBe4vlEuBE2 (pdo r WR)	. 5. f bp-. b-p	T0b3p µ: /t	990l	630T	f p3
		mg b3f Xo6do r eB4C4lae4s aCPBe4vlEuBE2 (6do r WR)	b. 6f 9-9. -b	T0b31 µ: /t	13Q5	6p0T	f pT
		mg b3f Xo1do r eB4C4lae4s aCPBe4vlEuBE2 (1do r WR)	39f T1-3p-p	T0bp µ: /t	950b	6. 0T	f 31
		mg b3f Xof Tdo r eB4C4lae4s aCPBe4vlEuBE2 (f Tdo r WR)	f bTbb6-6T-T	T0bpb µ: /t	. 60l	. T0T	f 3T

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2308015**	Page	: 1 of 16
Amendment	: **1**		
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: +6138549 9609
Project	: VIC_0445_PFASOMP_R3	Date Samples d eceive-	: 082May2R0R3
Site	: VIC_0445_PFASOMP_Base	Issue Date	: 192May2R0R3
Sampler	: [redacted]	No. of samples receive-	: 84
Or- er number	: 2	No. of samples analyse-	: 80

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief metho- summaries an- references are also provi- e- to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagge- in the Quality Control (QC) d eport.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compoun- Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EPR31A: Perfluoroalkyl Sulfonic Aci- s	EMR3080092200R	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	17632R321	41.4 %	68.02136%	**Recovery less than lower data quality objective**
EPR31B: Perfluoroalkyl Carboxylic Aci- s	EMR3080092200R	Anonymous	**Perfluorobutanoic acid (PFBA)**	3752RR24	68.R %	71.02135%	**Recovery less than lower data quality objective**
EPR31C: Perfluoroalkyl Sulfonami- es	EMR3080092200R	Anonymous	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	41512502R	68.7 %	70.02130%	**Recovery less than lower data quality objective**
EPR31C: Perfluoroalkyl Sulfonami- es	EMR3080092200R	Anonymous	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	R99125026	54.4 %	61.02139%	**Recovery less than lower data quality objective**
EPR31D: (n:R) Fluorotelomer Sulfonic Aci- s	EMR3080092200R	Anonymous	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	1R0RR626020	58.5 %	70.02130%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compoun- Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EPR31A: Perfluoroalkyl Sulfonic Aci- s	EMR3080152204R	0445_MW05R_R30505	**Perfluorobutane sulfonic acid (PFBS)**	37527325	Not Determine-	2222	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EPR31A: Perfluoroalkyl Sulfonic Aci- s	EMR3080152204R	0445_MW05R_R30505	**Perfluoropentane sulfonic acid (PFPeS)**	R70629124	Not Determine-	2222	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EPR31A: Perfluoroalkyl Sulfonic Aci- s	EMR3080152204R	0445_MW05R_R30505	**Perfluorohexane sulfonic acid (PFHxS)**	35524624	Not Determine-	2222	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EPR31A: Perfluoroalkyl Sulfonic Aci- s	EMR3080152204R	0445_MW05R_R30505	**Perfluorooctane sulfonic acid (PFOS)**	17632R321	Not Determine-	2222	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EPR31B: Perfluoroalkyl Carboxylic Aci- s	EMR3080152204R	0445_MW05R_R30505	**Perfluorohexanoic acid (PFHxA)**	3072R424	Not Determine-	2222	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EPR31B: Perfluoroalkyl Carboxylic Aci- s	EMR3080152204R	0445_MW05R_R30505	**Perfluorooctanoic acid (PFOA)**	33526721	Not Determine-	2222	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EPR31D: (n:R) Fluorotelomer Sulfonic Aci- s	EMR3080152040	0445_MW354_R30505	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	1R0RR626020	31.8 %	70.02130%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		d ate (%)		Quality Control Specification
Metho-	QC 5	d egular	Actual	Expecte-	
Laboratory Duplicates (DUP)					
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	5	73	6.85	10.00	NEPM R013 B3 & ALS QC Stan- ar-

Analysis Holding Time Compliance

If samples are i- entifie- below as having been analyse- or extracte- outsi- e of recommen- e- hol- ing times, this shoul- be taken into consi- eration when interpreting results.

This report summarizes extraction / preparation an- analysis times an- compares each with ALS recommen- e- hol- ing times (referencing USEPA SW 846, APHA, AS an- NEPM) base- on the sample container provi- e- . Dates reporte- represent first - ate of extraction or analysis an- preclu- e subsequent - ilutions an- reruns. A listing of breaches (if any) is provi- e- herein.

Hol- ing time for leachate metho- s (e.g. TCLP) vary accor- ing to the analytes reporte- . Assessment compares the leach - ate with the shortest analyte hol- ing time for the equivalent soil metho- . These are: organics 14 - ays, mercury R8 - ays & other metals 180 - ays. A recor- e- breach - oes not guarantee a breach for all non2volatile parameters.

Hol- ing times for ***VOC in soils*** vary accor- ing to analytes of interest. Vinyl Chlori- e an- Styrene hol- ing time is 7 - ays; others 14 - ays. A recor- e- breach - oes not guarantee a breach for all VOC analytes an- shoul- be verifie- in case the reporte- breach is a false positive or Vinyl Chlori- e an- Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / *Container* / Client Sample ID(s)		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
0445_SD3R3_R30504,	0445_SD355_R30504	**04-May-2023**	**----**	2222	2222	**10-May-2023**	182May2R0R3	✓
HDPE Soil Jar (EA055)								
0445_SD346_R30505, 0445_SD38R_R30505, 0445_QC110_R30505	0445_SD375_R30505, 0445_QC108_R30505,	**05-May-2023**	**----**	2222	2222	**10-May-2023**	192May2R0R3	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0445_SD3R3_R30504,	0445_SD355_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓
HDPE Soil Jar (EP231X)								
0445_SD346_R30505, 0445_SD38R_R30505, 0445_QC110_R30505	0445_SD375_R30505, 0445_QC108_R30505,	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
0445_SD3R3_R30504,	0445_SD355_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓
HDPE Soil Jar (EP231X)								
0445_SD346_R30505, 0445_SD38R_R30505, 0445_QC110_R30505	0445_SD375_R30505, 0445_QC108_R30505,	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X)								
0445_SD3R3_R30504,	0445_SD355_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓
HDPE Soil Jar (EP231X)								
0445_SD346_R30505, 0445_SD38R_R30505, 0445_QC110_R30505	0445_SD375_R30505, 0445_QC108_R30505,	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓

Matrix: **SOIL**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0445_SD3R3_R30504, 0445_SD355_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓
HDPE Soil Jar (EP231X) 0445_SD346_R30505, 0445_SD375_R30505, 0445_SD38R_R30505, 0445_QC108_R30505, 0445_QC110_R30505	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0445_SD3R3_R30504, 0445_SD355_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓
HDPE Soil Jar (EP231X) 0445_SD346_R30505, 0445_SD375_R30505, 0445_SD38R_R30505, 0445_QC108_R30505, 0445_QC110_R30505	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	192Jun2R0R3	✓

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0445_SW3R1_R30501, 0445_SW313_R30501, 0445_SW3R6_R30501, 0445_QC100_R30501, 0445_SW3R4_R30501, 0445_QC300_R30501, 0445_QC101_R30501	**01-May-2023**	**09-May-2023**	R82Oct2R0R3	✓	**11-May-2023**	R82Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_SW349_R3050R, 0445_SW338_R3050R, 0445_SW340_R3050R, 0445_QC10R_R3050R	**02-May-2023**	**09-May-2023**	R92Oct2R0R3	✓	**11-May-2023**	R92Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_SW33R_R30503, 0445_SW448_R30503, 0445_SW310_R30503, 0445_SW316_R30503, 0445_QC103_R30503, 0445_QC303_R30503, 0445_QC104_R30503, 0445_SW333_R30503	**03-May-2023**	**09-May-2023**	302Oct2R0R3	✓	**11-May-2023**	302Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_SW3RR_R30504, 0445_MW307_R30504, 0445_SW336_R30504, 0445_SW355_R30504, 0445_SW3R3_R30504, 0445_MW31R_R30504, 0445_MW304_R30504, 0445_MW34R_R30504, 0445_MW346_R30504, 0445_QC305_R30504, 0445_QC105_R30504, 0445_QC301_R3050R	**04-May-2023**	**09-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_SW370_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_MW046_D_R30505, 0445_MW345_R30505, 0445_MW01R_R30505, 0445_MW354_R30505, 0445_QC106_R30505, 0445_MW05R_R30505, 0445_MW350__D_R30505, 0445_MW046_I_R30505	**05-May-2023**	**09-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_MW043_R30505, 0445_MW351_R30505, 0445_MW0R9_R30505, 0445_MW353_R30505, 0445_MW034_R30505, 0445_MW350_S_R30505, 0445_MW403_R30505, 0445_MW016_R30505, 0445_MW018_R30505, 0445_MW009_R30505, 0445_MW04R_R30505, 0445_MW035_R30505, 0445_MW35R_R30505, 0445_SW374_R30505, 0445_SW346_R30505, 0445_SW375_R30505, 0445_SW38R_R30505, 0445_QC307_R30505, 0445_QC109_R30505, 0445_QC107_R30505, 0445_MW404_R30505	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
0445_QC308_R30506,	0445_WWDd UM_R30506,	**06-May-2023**	**10-May-2023**	0R2Nov2R0R3	✓	**11-May-2023**	0R2Nov2R0R3	✓
0445_MW416_R30506,	0445_SW311_R30506,							
0445_SW380_R30506,	0445_QC500_R30506,							
0445_QC501_R30506,	0445_QC50R_R30506,							
0445_QC503_R30506,	0445_QC504_R30506,							
0445_MW0R0_R30506,	0445_SW387_R30506							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0445_SW3R1_R30501, 0445_SW313_R30501, 0445_SW3R6_R30501, 0445_QC100_R30501, 0445_SW3R4_R30501, 0445_QC300_R30501, 0445_QC101_R30501	**01-May-2023**	**09-May-2023**	R82Oct2R0R3	✓	**11-May-2023**	R82Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW349_R3050R, 0445_SW338_R3050R, 0445_SW340_R3050R, 0445_QC10R_R3050R	**02-May-2023**	**09-May-2023**	R92Oct2R0R3	✓	**11-May-2023**	R92Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW33R_R30503, 0445_SW448_R30503, 0445_SW310_R30503, 0445_SW316_R30503, 0445_QC103_R30503, 0445_QC303_R30503, 0445_QC104_R30503, 0445_SW333_R30503	**03-May-2023**	**09-May-2023**	302Oct2R0R3	✓	**11-May-2023**	302Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW3RR_R30504, 0445_MW307_R30504, 0445_SW336_R30504, 0445_SW355_R30504, 0445_SW3R3_R30504, 0445_MW31R_R30504, 0445_MW304_R30504, 0445_MW34R_R30504, 0445_MW346_R30504, 0445_QC305_R30504, 0445_QC105_R30504, 0445_QC301_R3050R	**04-May-2023**	**09-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW370_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_MW046_D_R30505, 0445_MW345_R30505, 0445_MW01R_R30505, 0445_MW354_R30505, 0445_QC106_R30505, 0445_MW05R_R30505, 0445_MW350__D_R30505, 0445_MW046_I_R30505	**05-May-2023**	**09-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_MW043_R30505, 0445_MW351_R30505, 0445_MW0R9_R30505, 0445_MW353_R30505, 0445_MW034_R30505, 0445_MW350_S_R30505, 0445_MW403_R30505, 0445_MW016_R30505, 0445_MW018_R30505, 0445_MW009_R30505, 0445_MW04R_R30505, 0445_MW035_R30505, 0445_MW35R_R30505, 0445_SW374_R30505, 0445_SW346_R30505, 0445_SW375_R30505, 0445_SW38R_R30505, 0445_QC307_R30505, 0445_QC109_R30505, 0445_QC107_R30505, 0445_MW404_R30505	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
0445_QC308_R30506,	0445_WWDd UM_R30506,	**06-May-2023**	**10-May-2023**	0R2Nov2R0R3	✓	**11-May-2023**	0R2Nov2R0R3	✓
0445_MW416_R30506,	0445_SW311_R30506,							
0445_SW380_R30506,	0445_QC500_R30506,							
0445_QC501_R30506,	0445_QC50R_R30506,							
0445_QC503_R30506,	0445_QC504_R30506,							
0445_MW0R0_R30506,	0445_SW387_R30506							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0445_SW3R1_R30501, 0445_SW313_R30501, 0445_SW3R6_R30501, 0445_QC100_R30501, 0445_SW3R4_R30501, 0445_QC300_R30501, 0445_QC101_R30501	**01-May-2023**	**09-May-2023**	R82Oct2R0R3	✓	**11-May-2023**	R82Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_SW349_R3050R, 0445_SW338_R3050R, 0445_SW340_R3050R, 0445_QC10R_R3050R	**02-May-2023**	**09-May-2023**	R92Oct2R0R3	✓	**11-May-2023**	R92Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_SW33R_R30503, 0445_SW448_R30503, 0445_SW310_R30503, 0445_SW316_R30503, 0445_QC103_R30503, 0445_QC303_R30503, 0445_QC104_R30503, 0445_SW333_R30503	**03-May-2023**	**09-May-2023**	302Oct2R0R3	✓	**11-May-2023**	302Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_SW3RR_R30504, 0445_MW307_R30504, 0445_SW336_R30504, 0445_SW355_R30504, 0445_SW3R3_R30504, 0445_MW31R_R30504, 0445_MW304_R30504, 0445_MW34R_R30504, 0445_MW346_R30504, 0445_QC305_R30504, 0445_QC105_R30504, 0445_QC301_R3050R	**04-May-2023**	**09-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_SW370_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_MW046_D_R30505, 0445_MW345_R30505, 0445_MW01R_R30505, 0445_MW354_R30505, 0445_QC106_R30505, 0445_MW05R_R30505, 0445_MW350__D_R30505, 0445_MW046_I_R30505	**05-May-2023**	**09-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X) 0445_MW043_R30505, 0445_MW351_R30505, 0445_MW0R9_R30505, 0445_MW353_R30505, 0445_MW034_R30505, 0445_MW350_S_R30505, 0445_MW403_R30505, 0445_MW016_R30505, 0445_MW018_R30505, 0445_MW009_R30505, 0445_MW04R_R30505, 0445_MW035_R30505, 0445_MW35R_R30505, 0445_SW374_R30505, 0445_SW346_R30505, 0445_SW375_R30505, 0445_SW38R_R30505, 0445_QC307_R30505, 0445_QC109_R30505, 0445_QC107_R30505, 0445_MW404_R30505	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides - Continued								
0445_QC308_R30506,	0445_WWDd UM_R30506,	**06-May-2023**	**10-May-2023**	0R2Nov2R0R3	✓	**11-May-2023**	0R2Nov2R0R3	✓
0445_MW416_R30506,	0445_SW311_R30506,							
0445_SW380_R30506,	0445_QC500_R30506,							
0445_QC501_R30506,	0445_QC50R_R30506,							
0445_QC503_R30506,	0445_QC504_R30506,							
0445_MW0R0_R30506,	0445_SW387_R30506							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_SW3R1_R30501, 0445_SW313_R30501, 0445_SW3R6_R30501, 0445_QC100_R30501, 0445_SW3R4_R30501, 0445_QC300_R30501, 0445_QC101_R30501	**01-May-2023**	**09-May-2023**	R82Oct2R0R3	✓	**11-May-2023**	R82Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW349_R3050R, 0445_SW338_R3050R, 0445_SW340_R3050R, 0445_QC10R_R3050R	**02-May-2023**	**09-May-2023**	R92Oct2R0R3	✓	**11-May-2023**	R92Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW33R_R30503, 0445_SW448_R30503, 0445_SW310_R30503, 0445_SW316_R30503, 0445_QC103_R30503, 0445_QC303_R30503, 0445_QC104_R30503, 0445_SW333_R30503	**03-May-2023**	**09-May-2023**	302Oct2R0R3	✓	**11-May-2023**	302Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW3RR_R30504, 0445_MW307_R30504, 0445_SW336_R30504, 0445_SW355_R30504, 0445_SW3R3_R30504, 0445_MW31R_R30504, 0445_MW304_R30504, 0445_MW34R_R30504, 0445_MW346_R30504, 0445_QC305_R30504, 0445_QC105_R30504, 0445_QC301_R3050R	**04-May-2023**	**09-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW370_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_MW046_D_R30505, 0445_MW345_R30505, 0445_MW01R_R30505, 0445_MW354_R30505, 0445_QC106_R30505, 0445_MW05R_R30505, 0445_MW350__D_R30505, 0445_MW046_I_R30505	**05-May-2023**	**09-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_MW043_R30505, 0445_MW351_R30505, 0445_MW0R9_R30505, 0445_MW353_R30505, 0445_MW034_R30505, 0445_MW350_S_R30505, 0445_MW403_R30505, 0445_MW016_R30505, 0445_MW018_R30505, 0445_MW009_R30505, 0445_MW04R_R30505, 0445_MW035_R30505, 0445_MW35R_R30505, 0445_SW374_R30505, 0445_SW346_R30505, 0445_SW375_R30505, 0445_SW38R_R30505, 0445_QC307_R30505, 0445_QC109_R30505, 0445_QC107_R30505, 0445_MW404_R30505	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
0445_QC308_R30506,	0445_WWDd UM_R30506,	**06-May-2023**	**10-May-2023**	0R2Nov2R0R3	✓	**11-May-2023**	0R2Nov2R0R3	✓
0445_MW416_R30506,	0445_SW311_R30506,							
0445_SW380_R30506,	0445_QC500_R30506,							
0445_QC501_R30506,	0445_QC50R_R30506,							
0445_QC503_R30506,	0445_QC504_R30506,							
0445_MW0R0_R30506,	0445_SW387_R30506							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_SW3R1_R30501, 0445_SW313_R30501, 0445_SW3R6_R30501, 0445_QC100_R30501, 0445_SW3R4_R30501, 0445_QC300_R30501, 0445_QC101_R30501	**01-May-2023**	**09-May-2023**	R82Oct2R0R3	✓	**11-May-2023**	R82Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW349_R3050R, 0445_SW338_R3050R, 0445_SW340_R3050R, 0445_QC10R_R3050R	**02-May-2023**	**09-May-2023**	R92Oct2R0R3	✓	**11-May-2023**	R92Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW33R_R30503, 0445_SW448_R30503, 0445_SW310_R30503, 0445_SW316_R30503, 0445_QC103_R30503, 0445_QC303_R30503, 0445_QC104_R30503, 0445_SW333_R30503	**03-May-2023**	**09-May-2023**	302Oct2R0R3	✓	**11-May-2023**	302Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW3RR_R30504, 0445_MW307_R30504, 0445_SW336_R30504, 0445_SW355_R30504, 0445_SW3R3_R30504, 0445_MW31R_R30504, 0445_MW304_R30504, 0445_MW34R_R30504, 0445_MW346_R30504, 0445_QC305_R30504, 0445_QC105_R30504, 0445_QC301_R3050R	**04-May-2023**	**09-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_SW370_R30504	**04-May-2023**	**10-May-2023**	312Oct2R0R3	✓	**11-May-2023**	312Oct2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_MW046_D_R30505, 0445_MW345_R30505, 0445_MW01R_R30505, 0445_MW354_R30505, 0445_QC106_R30505, 0445_MW05R_R30505, 0445_MW350__D_R30505, 0445_MW046_I_R30505	**05-May-2023**	**09-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X)							
0445_MW043_R30505, 0445_MW351_R30505, 0445_MW0R9_R30505, 0445_MW353_R30505, 0445_MW034_R30505, 0445_MW350_S_R30505, 0445_MW403_R30505, 0445_MW016_R30505, 0445_MW018_R30505, 0445_MW009_R30505, 0445_MW04R_R30505, 0445_MW035_R30505, 0445_MW35R_R30505, 0445_SW374_R30505, 0445_SW346_R30505, 0445_SW375_R30505, 0445_SW38R_R30505, 0445_QC307_R30505, 0445_QC109_R30505, 0445_QC107_R30505, 0445_MW404_R30505	**05-May-2023**	**10-May-2023**	012Nov2R0R3	✓	**11-May-2023**	012Nov2R0R3	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Hol- ing time breach ; ✓ = Within hol- ing time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums - Continued								
0445_QC308_R30506,	0445_WWDd UM_R30506,	**06-May-2023**	**10-May-2023**	0R2Nov2R0R3	✓	**11-May-2023**	0R2Nov2R0R3	✓
0445_MW416_R30506,	0445_SW311_R30506,							
0445_SW380_R30506,	0445_QC500_R30506,							
0445_QC501_R30506,	0445_QC50R_R30506,							
0445_QC503_R30506,	0445_QC504_R30506,							
0445_MW0R0_R30506,	0445_SW387_R30506							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analyse- within the analytical lot(s) in which the submitte- sample(s) was(were) processe- . Actual rate shoul- be greater than or equal to the expecte- rate. A listing of breaches is provi- e- in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	10	10.00	10.00	✓	NEPM R013 B3 & ALS QC Stan- ar-
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	R	19	10.53	10.00	✓	NEPM R013 B3 & ALS QC Stan- ar-
Laboratory Control Samples (LCS)							
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	1	19	5.26	5.00	✓	NEPM R013 B3 & ALS QC Stan- ar-
Metho- Blanks (MB)							
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	1	19	5.26	5.00	✓	NEPM R013 B3 & ALS QC Stan- ar-
Matrix Spikes (MS)							
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	1	19	5.26	5.00	✓	NEPM R013 B3 & ALS QC Stan- ar-

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	5	73	6.85	10.00	×	NEPM R013 B3 & ALS QC Stan- ar-
Laboratory Control Samples (LCS)							
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	4	73	5.48	5.00	✓	NEPM R013 B3 & ALS QC Stan- ar-
Metho- Blanks (MB)							
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	4	73	5.48	5.00	✓	NEPM R013 B3 & ALS QC Stan- ar-
Matrix Spikes (MS)							
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	4	73	5.48	5.00	✓	NEPM R013 B3 & ALS QC Stan- ar-

Brief Method Summaries

The analytical proce- ures use- by the Environmental Division have been - evelope- from establishe- internationally recognize- proce- ures such as those publishe- by the US EPA, APHA, AS an- NEPM. In house - evelope- proce- ures are employe- in the absence of - ocumente- stan- ar- s or by client request. The following report provi- es brief - escriptions of the analytical proce- ures employe- for results reporte- in the Certificate of Analysis. Sources from which ALS metho- s have been - evelope- are provi- e- within the Metho- Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric proce- ure base- on weight loss over a 1R hour - rying perio- at 1052110 - egrees C. This metho- is compliant with NEPM Sche- ule B(3).
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	SOIL	In2house: Analysis of soils by solvent extraction followe- by LC2Electrospray2MS2MS, Negative Mo- e using Md M using internal stan- ar- quantitation. Isotopically labelle- analogues of target analytes use- as internal stan- ar- s an- surrogates are a- - e- to a portion of soil which is then extracte- with MTBE an- an ion pairing reagent. A portion of extract is exchange- into the analytical solvent mixture, combine- with an equal volume reagent water an- filtere- for analysis. Metho- proce- ures an- - ata quality objectives conform to US DoD QSM 5.3, table B215 requirements.
Per2an- Polyfluoroalkyl Substances (PFAS) by LCMSMS	EPR31X	WATEd	In2house: Analysis of fresh an- saline waters by Soli- Phase Extraction (SPE) followe- by LC2Electrospray2MS2MS, Negative Mo- e using Md M an- internal stan- ar- quantitation. Isotopically labelle- analogues of target analytes use- as internal stan- ar- s an- surrogates are a- - e- to the sample container. The entire contents are transferre- to a soli- phase extraction (SPE) cartri- ge. The sample container is successively rinse- with aliquots of the elution solvent. The elute- extract is combine- with an equal volume of reagent water an- a portion is filtere- for analysis. Metho- proce- ures an- - ata quality objectives conform to US DoD QSM 5.3, table B215 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuEChed S Extraction of Soli- s	Od G71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency ai- e- by the a- - ition of salts un- er aci- ic con- itions. Where relevant, interferences from co2extracte- organics are remove- with - ispersive clean2up me- ia (- SPE). The extract is either - ilute- or concentrate- an- exchange- into the analytical solvent.
Soli- Phase Extraction (SPE) for PFAS in water	Od G7R	WATEd	In2house: Isotopically labelle- analogues of target analytes use- as internal stan- ar- s an- surrogates are a- - e- to the sample container. The entire contents are transferre- to a soli- phase extraction (SPE) cartri- ge. The sample container is successively rinse- with aliquots of the elution solvent. The elute- extract is combine- with an equal volume of reagent water an- a portion is filtere- for analysis. Metho- proce- ures conform to US DoD QSM 5.3, table B215 requirements.

CHAIN OF CUSTODY

ALS COC#: 51449 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY: [redacted]
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 08/05/23 – 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SCANNED

Environmental Division
Melbourne
Work Order Reference
EM2308015

Telephone : +61-3-8549 9600

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0445_SW321_230501		01/05/2023 03:26 PM	WATER	ALS: 2 Non ALS: 0	No		X			
002	0445_SW313_230501		01/05/2023 03:28 PM	WATER	ALS: 2 Non ALS: 0	No		X			
003	0445_SW326_230501		01/05/2023 03:30 PM	WATER	ALS: 2 Non ALS: 0	No		X			
004	0445_QC100_230501		01/05/2023 03:31 PM	WATER	ALS: 2 Non ALS: 0	No		X			
005	0445_SW324_230501		01/05/2023 03:44 PM	WATER	ALS: 2 Non ALS: 0	No		X			
006	0445_QC300_230501		01/05/2023 03:45 PM	WATER	ALS: 2 Non ALS: 0	No		X			
007	0445_QC101_230501		01/05/2023 03:47 PM	WATER	ALS: 2 Non ALS: 0	No		X			
008	0445_SW349_230502		02/05/2023 05:30 PM	WATER	ALS: 2 Non ALS: 0	No		X			
009	0445_SW338_230502		02/05/2023 05:32 PM	WATER	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 51449 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	0445_SW340_230502		02/05/2023 05:37 PM	WATER	ALS: 2 Non ALS: 0	No		X			
011	0445_QC302_230502		02/05/2023 05:39 PM	WATER	ALS: 2 Non ALS: 0	Yes	-				
012	0445_QC102_230502		02/05/2023 05:40 PM	WATER	ALS: 2 Non ALS: 0	No		X			
013	0445_SW332_230503		03/05/2023 07:53 PM	WATER	ALS: 2 Non ALS: 0	No		X			
014	0445_SW448_230503		03/05/2023 07:54 PM	WATER	ALS: 2 Non ALS: 0	No		X			
015	0445_SW310_230503		03/05/2023 07:55 PM	WATER	ALS: 2 Non ALS: 0	No		X			
016	0445_SW316_230503		03/05/2023 07:56 PM	WATER	ALS: 2 Non ALS: 0	No		X			
017	0445_QC103_230503		03/05/2023 07:57 PM	WATER	ALS: 2 Non ALS: 0	No		X			
018	0445_QC303_230503		03/05/2023 07:58 PM	WATER	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 51449 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 – 13:45

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
019	0445_QC104_230503		03/05/2023 07:59 PM	WATER	ALS: 2 Non ALS: 0	No		X			
020	0445_SW322_230504		04/05/2023 05:40 PM	WATER	ALS: 2 Non ALS: 0	No		X			
021	0445_MW307_230504		04/05/2023 05:43 PM	WATER	ALS: 2 Non ALS: 0	No		X			
022	0445_SW336_230504		04/05/2023 05:44 PM	WATER	ALS: 2 Non ALS: 0	No		X			
023	0445_SW355_230504		04/05/2023 05:45 PM	WATER	ALS: 2 Non ALS: 0	No		X			
024	0445_SW323_230504		04/05/2023 05:48 PM	WATER	ALS: 2 Non ALS: 0	No		X			
025	0445_MW312_230504		04/05/2023 05:49 PM	WATER	ALS: 2 Non ALS: 0	No		X			
026	0445_SW333_230503		03/05/2023 05:52 PM	WATER	ALS: 2 Non ALS: 0	No		X			
027	0445_MW304_230504		04/05/2023 06:00 PM	WATER	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 51449 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 – 1345

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
028	0445_MW342_230504		04/05/2023 06:07 PM	WATER	ALS: 2 Non ALS: 0	No		X			
029	0445_MW346_230504		04/05/2023 06:08 PM	WATER	ALS: 2 Non ALS: 0	No		X			
030	0445_QC304_230504		04/05/2023 06:10 PM	WATER	ALS: 2 Non ALS: 0	Yes	-				
031	0445_QC305_230504		04/05/2023 06:11 PM	WATER	ALS: 2 Non ALS: 0	No		X			
032	0445_QC105_230504		04/05/2023 06:12 PM	WATER	ALS: 2 Non ALS: 0	No		X			
033	0445_QC301_230502		04/05/2023 06:13 PM	WATER	ALS: 2 Non ALS: 0	No		X			
034	0445_SD323_230504		04/05/2023 06:14 PM	SOIL	ALS: 1 Non ALS: 0	No			X		
035	0445_SD346_230505		05/05/2023 08:44 PM	SOIL	ALS: 1 Non ALS: 0	No			X		
036	0445_SD375_230505		05/05/2023 08:45 PM	SOIL	ALS: 1 Non ALS: 0	No			X		

CHAIN OF CUSTODY

ALS COC#: 51449 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 — 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
037	0445_MW046_D_230505		05/05/2023 08:50 PM	WATER	ALS: 2 Non ALS: 0	No		X			
038	0445_MW345_230505		05/05/2023 08:51 PM	WATER	ALS: 2 Non ALS: 0	No		X			
039	0445_MW012_230505		05/05/2023 08:52 PM	WATER	ALS: 2 Non ALS: 0	No		X			
040	0445_MW354_230505		05/05/2023 08:54 PM	WATER	ALS: 6 Non ALS: 0	No		X			Extra bottles for lab qc
041	0445_QC106_230505		05/05/2023 08:56 PM	WATER	ALS: 2 Non ALS: 0	No		X			
042	0445_MW052_230505		05/05/2023 08:57 PM	WATER	ALS: 6 Non ALS: 0	No		X			Extra bottles for lab qc
043	0445_MW350__D_230505		05/05/2023 09:00 PM	WATER	ALS: 2 Non ALS: 0	No		X			
044	0445_MW043_230505		05/05/2023 09:02 PM	WATER	ALS: 2 Non ALS: 0	No		X			
045	0445_MW351_230505		05/05/2023 09:03 PM	WATER	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 51449 ALS Laboratory: EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 – 13:45

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
046	0445_MW029_230505		05/05/2023 09:04 PM	WATER	ALS: 2 Non ALS: 0	No		X			
047	0445_MW046_I_230505		05/05/2023 09:08 PM	WATER	ALS: 6 Non ALS: 0	No		X			Extra bottles for lab qc
048	0445_MW353_230505		05/05/2023 09:10 PM	WATER	ALS: 2 Non ALS: 0	No		X			
049	0445_MW034_230505		05/05/2023 09:10 PM	WATER	ALS: 2 Non ALS: 0	No		X			
050	0445_MW350_S_230505		05/05/2023 09:12 PM	WATER	ALS: 2 Non ALS: 0	No		X			
051	0445_MW403_230505		05/05/2023 09:13 PM	WATER	ALS: 2 Non ALS: 0	No		X			
052	0445_MW016_230505		05/05/2023 09:15 PM	WATER	ALS: 2 Non ALS: 0	No		X			
053	0445_MW018_230505		05/05/2023 09:16 PM	WATER	ALS: 2 Non ALS: 0	No		X			
054	0445_MW009_230505		05/05/2023 09:17 PM	WATER	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 51449 *ALS Laboratory:* EM Melbourne

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 - 13:45

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
055	0445_MW042_230505		05/05/2023 09:18 PM	WATER	ALS: 2 Non ALS: 0	No		X			
056	0445_MW035_230505		05/05/2023 09:19 PM	WATER	ALS: 2 Non ALS: 0	No		X			
057	0445_MW352_230505		05/05/2023 09:19 PM	WATER	ALS: 2 Non ALS: 0	No		X			
058	0445_SD382_230505		05/05/2023 09:24 PM	SOIL	ALS: 1 Non ALS: 0	No			X		
059	0445_QC108_230505		05/05/2023 09:24 PM	SOIL	ALS: 1 Non ALS: 0	No			X		
060	0445_QC110_230505		05/05/2023 09:25 PM	SOIL	ALS: 1 Non ALS: 0	No			X		
061	0445_QC306_230505		05/05/2023 09:26 PM	WATER	ALS: 2 Non ALS: 0	Yes	-				
062	0445_SW374_230505		05/05/2023 09:29 PM	WATER	ALS: 2 Non ALS: 0	No		X			
063	0445_SW346_230505		05/05/2023 09:30 PM	WATER	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: 51449 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 - 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
064	0445_SW375_230505		05/05/2023 09:31 PM	WATER	ALS: 6 Non ALS: 0	No		X			Extra bottles for lab qc
065	0445_SW382_230505		05/05/2023 09:32 PM	WATER	ALS: 2 Non ALS: 0	No		X			
066	0445_QC307_230505		05/05/2023 09:36 PM	WATER	ALS: 2 Non ALS: 0	No		X			
067	0445_QC109_230505		05/05/2023 09:37 PM	WATER	ALS: 2 Non ALS: 0	No		X			
068	0445_QC107_230505		05/05/2023 09:38 PM	WATER	ALS: 2 Non ALS: 0	No		X			
069	0445_QC309_230506		06/05/2023 01:36 PM	WATER	ALS: 2 Non ALS: 0	Yes	-				
070	0445_QC308_230506		06/05/2023 01:37 PM	WATER	ALS: 2 Non ALS: 0	No		X			
071	0445_WWDRUM_230506		06/05/2023 01:38 PM	WATER	ALS: 2 Non ALS: 0	No		X			
072	0445_MW416_230506		06/05/2023 01:38 PM	WATER	ALS: 6 Non ALS: 0	No		X			Extra bottles for lab qc

CHAIN OF CUSTODY

ALS COC#: 51449 *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 - 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
073	0445_SW311_230506		06/05/2023 01:40 PM	WATER	ALS: 2 Non ALS: 0	No		X			
074	0445_MW404_230505		06/05/2023 01:41 PM	WATER	ALS: 2 Non ALS: 0	No		X			
075	0445_SW380_230506		06/05/2023 01:50 PM	WATER	ALS: 2 Non ALS: 0	No		X			
076	0445_QC500_230506		06/05/2023 02:05 PM	WATER	ALS: 2 Non ALS: 0	No		X			
077	0445_QC501_230506		06/05/2023 02:06 PM	WATER	ALS: 2 Non ALS: 0	No		X			
078	0445_QC502_230506		06/05/2023 02:07 PM	WATER	ALS: 2 Non ALS: 0	No		X			
079	0445_QC503_230506		06/05/2023 02:07 PM	WATER	ALS: 2 Non ALS: 0	No		X			
080	0445_QC504_230506		06/05/2023 02:08 PM	WATER	ALS: 2 Non ALS: 0	No		X			
081	0445_MW020_230506		06/05/2023 02:25 PM	WATER	ALS: 2 Non ALS: 0	No		X			

CHAIN OF CUSTODY

ALS COC#: **51449** *ALS Laboratory:* EM Melbourne

CLIENT: MWHAUS - STANTEC AUSTRALIA PTY LTD

PROJECT: SY/139/19_Bandiana

SITE: VIC_0445_PFASOMP_Base

ORDER NO:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: [redacted] SAMPLER MOBILE: [redacted]

QUOTE NO: SY/139/19_Bandiana / EM2022MWHAUS0003

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	RB DATE TIME: 08/05/23 – 13:45

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	GW: PFAS Only WATER	S: PFAS Only SEDIMENT	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
082	0445_SW387_230506		08/05/2023 10:58 AM	WATER	ALS: 2 Non ALS: 0	No		X			

83 0445_SD355

84 0445_SW370

Ciara Barr

From: ALS Enviro Melbourne
Sent: Monday, 8 May 2023 3:52 PM
To: COC Melbourne
Cc: [redacted]
Subject: MWHAUS-DEF19008 - incoming sample please amend 2 sample EM2308009 to EM2308015

Follow Up Flag: Follow up
Flag Status: Flagged

Sample arriving today,

Please amend
EM2308009 ECOC 51782
0445_SD355 Sample #20
0445_SW370 Sample #17

To EM2308015 ECOC 51149.

Thank you

Kind Regards,

[redacted]
Receptionist -Environmental Australia
ALS Limited

[redacted]
2-4 Westall Road, Springvale VIC 3171

alsglobal.com

In 2023 ALS Springvale will be transitioning our telephony services to a different provider. During this time you may notice that the number that we call you on is not consistent with the details listed above. All of our existing numbers are being routed through temporary numbers during this time and will remain active for the entire process. Please continue to contact us via the numbers listed above, we would recommend not saving the temporary numbers to your records as they will be deleted once the transition is complete.

From: [redacted]
Sent: Monday, 8 May 2023 11:21 AM
To: ALS Enviro Melbourne <ALSEnviroMelbourne@ALSGlobal.com>; COC Melbourne <COC.Melbourne@alsglobal.com>
Subject: [EXTERNAL] - FW: DEF19008 - Bandiana sample pick up

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Stantec Australia Pty Ltd
Level 22, 570 Bourke Street
Melbourne
VIC 3000

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **987797-W**
Project name
Project ID VIC_0445_PFASOMP
Received Date May 08, 2023

Client Sample ID			0445_QC200_230501	0445_QC201_230501	0445_QC202_230502	0445_QC203_230503
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M23-My0021679**	**M23-My0021680**	**M23-My0021681**	**M23-My0021682**
Date Sampled			**May 01, 2023**	**May 01, 2023**	**May 02, 2023**	**May 03, 2023**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.06	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.11	0.03	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.07	0.16	0.10	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	[N09]0.05	[N09]0.02	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.03	[N09]0.08	[N09]0.04	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	[N09]0.02	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	66	86	57	59
13C5-PFPeA (surr.)	1	%	85	79	92	82
13C5-PFHxA (surr.)	1	%	109	78	107	99
13C4-PFHpA (surr.)	1	%	115	104	112	106
13C8-PFOA (surr.)	1	%	118	110	113	112
13C5-PFNA (surr.)	1	%	115	100	105	104
13C6-PFDA (surr.)	1	%	85	91	95	105
13C2-PFUnDA (surr.)	1	%	82	77	70	81
13C2-PFDoDA (surr.)	1	%	69	63	54	64
13C2-PFTeDA (surr.)	1	%	45	32	49	31
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	120	99	102	102
D3-N-MeFOSA (surr.)	1	%	103	47	63	68

Client Sample ID			0445_QC200_230501	0445_QC201_230501	0445_QC202_230502	0445_QC203_230503
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-My0021679	M23-My0021680	M23-My0021681	M23-My0021682
Date Sampled			May 01, 2023	May 01, 2023	May 02, 2023	May 03, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	104	43	57	66
D7-N-MeFOSE (surr.)	1	%	82	61	55	58
D9-N-EtFOSE (surr.)	1	%	75	54	52	52
D5-N-EtFOSAA (surr.)	1	%	69	67	60	70
D3-N-MeFOSAA (surr.)	1	%	102	86	86	88
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.04	0.05	0.03	0.02
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.01	0.02	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.04	[N09]0.05	[N09]0.03	[N09]< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.62	[N09]0.71	[N09]0.19	[N09]0.07
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.07	[N09]0.03	[N09]0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]4.7	[N09]2.1	[N09]0.72	[N09]0.14
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	108	96	98	100
18O2-PFHxS (surr.)	1	%	103	57	96	103
13C8-PFOS (surr.)	1	%	62	58	85	106
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	86	82	102	84
13C2-6:2 FTSA (surr.)	1	%	116	140	140	124
13C2-8:2 FTSA (surr.)	1	%	109	117	122	124
13C2-10:2 FTSA (surr.)	1	%	83	95	80	88
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	5.32	2.81	0.91	0.21
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	4.73	2.18	0.76	0.14
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	5.35	2.89	0.95	0.21
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	5.46	3.32	1.13	0.23
Sum of PFASs (n=30)*	0.1	ug/L	5.58	3.44	1.17	0.23

Client Sample ID			0445_QC204_230503	0445_QC205_230504	0445_QC206_230505	0445_QC207_230505
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-My0021683	M23-My0021684	M23-My0021685	M23-My0021686
Date Sampled			May 03, 2023	May 04, 2023	May 05, 2023	May 05, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.27	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.04	0.01	0.39	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.08	0.03	1.6	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.02	< 0.01	[N09]0.30	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.03	[N09]0.02	[N09]0.65	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	60	108	98	117
13C5-PFPeA (surr.)	1	%	84	113	99	120
13C5-PFHxA (surr.)	1	%	101	121	102	138
13C4-PFHpA (surr.)	1	%	109	120	108	131
13C8-PFOA (surr.)	1	%	110	114	80	128
13C5-PFNA (surr.)	1	%	112	106	94	124
13C6-PFDA (surr.)	1	%	99	106	68	114
13C2-PFUnDA (surr.)	1	%	87	88	85	90
13C2-PFDoDA (surr.)	1	%	67	76	71	72
13C2-PFTeDA (surr.)	1	%	34	45	37	35
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	104	118	105	121
D3-N-MeFOSA (surr.)	1	%	54	111	21	153
D5-N-EtFOSA (surr.)	1	%	55	125	26	175
D7-N-MeFOSE (surr.)	1	%	69	98	75	96
D9-N-EtFOSE (surr.)	1	%	59	93	67	96
D5-N-EtFOSAA (surr.)	1	%	67	69	70	69
D3-N-MeFOSAA (surr.)	1	%	95	103	98	100
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.03	0.02	1.1	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.02	< 0.01	0.45	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.03	[N09]0.02	[N09]1.1	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.57	[N09]0.17	[N09]7.6	[N09]0.02
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.02	[N09]0.02	[N09]0.78	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]1.5	[N09]0.15	[N09]8.3	[N09]0.02
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			0445_QC204_230503	0445_QC205_230504	0445_QC206_230505	0445_QC207_230505
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-My0021683	M23-My0021684	M23-My0021685	M23-My0021686
Date Sampled			May 03, 2023	May 04, 2023	May 05, 2023	May 05, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	99	107	86	121
18O2-PFHxS (surr.)	1	%	96	99	74	126
13C8-PFOS (surr.)	1	%	56	105	71	111
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.21	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	88	100	83	95
13C2-6:2 FTSA (surr.)	1	%	117	91	84	99
13C2-8:2 FTSA (surr.)	1	%	115	99	81	94
13C2-10:2 FTSA (surr.)	1	%	96	100	83	88
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	2.07	0.32	15.9	0.04
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	1.53	0.17	8.95	0.02
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	2.1	0.34	16.55	0.04
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	2.27	0.4	20.42	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	2.34	0.44	22.75	< 0.1

Client Sample ID			0445_QC209_230505
Sample Matrix			Water
Eurofins Sample No.			M23-My0021688
Date Sampled			May 05, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.07
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.03
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	107
13C5-PFPeA (surr.)	1	%	104
13C5-PFHxA (surr.)	1	%	120
13C4-PFHpA (surr.)	1	%	118
13C8-PFOA (surr.)	1	%	120
13C5-PFNA (surr.)	1	%	110
13C6-PFDA (surr.)	1	%	101

Client Sample ID			0445_QC209_230505
Sample Matrix			Water
Eurofins Sample No.			M23-My0021688
Date Sampled			May 05, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
13C2-PFUnDA (surr.)	1	%	85
13C2-PFDoDA (surr.)	1	%	68
13C2-PFTeDA (surr.)	1	%	44
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	117
D3-N-MeFOSA (surr.)	1	%	150
D5-N-EtFOSA (surr.)	1	%	169
D7-N-MeFOSE (surr.)	1	%	94
D9-N-EtFOSE (surr.)	1	%	87
D5-N-EtFOSAA (surr.)	1	%	65
D3-N-MeFOSAA (surr.)	1	%	95
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.05
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.05
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.49
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.04
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]1.1
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	114
18O2-PFHxS (surr.)	1	%	103
13C8-PFOS (surr.)	1	%	93
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	90
13C2-6:2 FTSA (surr.)	1	%	110
13C2-8:2 FTSA (surr.)	1	%	98
13C2-10:2 FTSA (surr.)	1	%	81

Client Sample ID			0445_QC209_230505
Sample Matrix			**Water**
Eurofins Sample No.			**M23-My0021688**
Date Sampled			**May 05, 2023**
Test/Reference	LOR	Unit	
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	1.59
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	1.13
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	1.62
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	1.77
Sum of PFASs (n=30)*	0.1	ug/L	1.87

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	May 09, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	May 09, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	May 09, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	May 09, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	May 09, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:
Project ID: VIC_0445_PFASOMP

Order No.:
Report #: 987797
Phone:
Fax:

Received: May 8, 2023 1:43 PM
Due: May 15, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0445_QC200_230501	May 01, 2023		Water	M23-My0021679		X
2	0445_QC201_230501	May 01, 2023		Water	M23-My0021680		X
3	0445_QC202_230502	May 02, 2023		Water	M23-My0021681		X
4	0445_QC203_230503	May 03, 2023		Water	M23-My0021682		X
5	0445_QC204_230503	May 03, 2023		Water	M23-My0021683		X
6	0445_QC205_230504	May 04, 2023		Water	M23-My0021684		X
7	0445_QC206_230505	May 05, 2023		Water	M23-My0021685		X
8	0445_QC207_230505	May 05, 2023		Water	M23-My0021686		X

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:
Project ID: VIC_0445_PFASOMP

Order No.:
Report #: 987797
Phone:
Fax:

Received: May 8, 2023 1:43 PM
Due: May 15, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
9	0445_QC208_230505	May 05, 2023		Soil	M23-My0021687	X	X
10	0445_QC209_230505	May 05, 2023		Water	M23-My0021688		X
11	0445_QC210_230505	May 05, 2023		Soil	M23-My0021689	X	X
Test Counts						2	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	74			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	70			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	74			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	75			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	76			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	75			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	72			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	72			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	83			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	98			50-150	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	72			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	86			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	80			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	75			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	71			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	86			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	79			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	71			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	74			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	65			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	72			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	75			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	74			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	71			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	67			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	68			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	72			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	77			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	79			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-My0018535	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-My0021917	NCP	ug/L	0.32	0.27	15	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-My0021917	NCP	ug/L	0.27	0.28	5.2	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-My0018535	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-My0021917	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-My0021917	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-My0021917	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-My0021917	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-My0021917	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-My0021917	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-My0018535	NCP	ug/L	0.01	0.01	2.8	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-My0018535	NCP	ug/L	0.02	0.03	4.9	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-My0024851	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-My0018535	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Catherine Wilson	Analytical Services Manager
Joseph Edouard	Senior Analyst-PFAS

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Stantec Australia Pty Ltd
Level 22, 570 Bourke Street
Melbourne
VIC 3000

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **987797-S**
Project name
Project ID VIC_0445_PFASOMP
Received Date May 08, 2023

Client Sample ID			**0445_QC208_230505**	**0445_QC210_230505**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M23-My0021687**	**M23-My0021689**
Date Sampled			**May 05, 2023**	**May 05, 2023**
Test/Reference	LOR	Unit		
Sample Properties				
% Moisture	1	%	22	31
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5
13C4-PFBA (surr.)	1	%	83	90
13C5-PFPeA (surr.)	1	%	92	100
13C5-PFHxA (surr.)	1	%	99	110
13C4-PFHpA (surr.)	1	%	96	104
13C8-PFOA (surr.)	1	%	92	104
13C5-PFNA (surr.)	1	%	109	120
13C6-PFDA (surr.)	1	%	112	113
13C2-PFUnDA (surr.)	1	%	123	131
13C2-PFDoDA (surr.)	1	%	123	120
13C2-PFTeDA (surr.)	1	%	92	107
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10

Client Sample ID			0445_QC208_230505	0445_QC210_230505
Sample Matrix			Soil	Soil
Eurofins Sample No.			M23-My0021687	M23-My0021689
Date Sampled			May 05, 2023	May 05, 2023
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
13C8-FOSA (surr.)	1	%	88	87
D3-N-MeFOSA (surr.)	1	%	78	75
D5-N-EtFOSA (surr.)	1	%	97	99
D7-N-MeFOSE (surr.)	1	%	113	101
D9-N-EtFOSE (surr.)	1	%	101	86
D5-N-EtFOSAA (surr.)	1	%	64	109
D3-N-MeFOSAA (surr.)	1	%	65	106
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5
13C3-PFBS (surr.)	1	%	105	107
18O2-PFHxS (surr.)	1	%	101	108
13C8-PFOS (surr.)	1	%	109	108
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	88	94
13C2-6:2 FTSA (surr.)	1	%	86	96
13C2-8:2 FTSA (surr.)	1	%	130	130
13C2-10:2 FTSA (surr.)	1	%	110	112
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	May 09, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	May 10, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	May 10, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	May 10, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	May 10, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	May 09, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Order No.:
Report #: 987797
Phone:
Fax:

Received: May 8, 2023 1:43 PM
Due: May 15, 2023
Priority: 5 Day
Contact Name: [redacted]

Project Name:
Project ID: VIC_0445_PFASOMP

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0445_QC200_230501	May 01, 2023		Water	M23-My0021679		X
2	0445_QC201_230501	May 01, 2023		Water	M23-My0021680		X
3	0445_QC202_230502	May 02, 2023		Water	M23-My0021681		X
4	0445_QC203_230503	May 03, 2023		Water	M23-My0021682		X
5	0445_QC204_230503	May 03, 2023		Water	M23-My0021683		X
6	0445_QC205_230504	May 04, 2023		Water	M23-My0021684		X
7	0445_QC206_230505	May 05, 2023		Water	M23-My0021685		X
8	0445_QC207_230505	May 05, 2023		Water	M23-My0021686		X

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:
Project ID: VIC_0445_PFASOMP

Order No.:
Report #: 987797
Phone:
Fax:

Received: May 8, 2023 1:43 PM
Due: May 15, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
9	0445_QC208_230505	May 05, 2023		Soil	M23-My0021687	X	X
10	0445_QC209_230505	May 05, 2023		Water	M23-My0021688		X
11	0445_QC210_230505	May 05, 2023		Soil	M23-My0021689	X	X
Test Counts						2	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	82			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	74			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	86			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	84			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	90			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	87			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	89			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	85			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	87			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	78			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	85			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	89			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	84			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	82			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	86			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	81			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	84			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	76			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	96			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	82			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	69			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	77			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	76			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	80			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	95			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	76			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	73			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	79			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-My0021689	CP	%	85			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-My0021689	CP	%	77			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-My0021689	CP	%	83			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-My0021689	CP	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-My0021689	CP	%	85			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-My0021689	CP	%	89			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-My0021689	CP	%	92			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-My0021689	CP	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-My0021689	CP	%	90			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-My0021689	CP	%	83			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-My0021689	CP	%	80			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-My0021689	CP	%	85			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-My0021689	CP	%	79			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-My0021689	CP	%	79			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-My0021689	CP	%	88			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-My0021689	CP	%	87			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-My0021689	CP	%	88			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-My0021689	CP	%	89			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-My0021689	CP	%	75			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-My0021689	CP	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-My0021689	CP	%	81			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-My0021689	CP	%	69			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-My0021689	CP	%	77			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-My0021689	CP	%	79			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-My0021689	CP	%	74			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-My0021689	CP	%	97			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-My0021689	CP	%	75			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-My0021689	CP	%	77			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-My0021689	CP	%	87			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-My0021689	CP	%	87			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	M23-My0021550	NCP	%	12	13	14	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-My0022590	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-My0022590	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-My0022590	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-My0022590	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Catherine Wilson	Analytical Services Manager
Joseph Edouard	Senior Analyst-PFAS
Mary Makarios	Senior Analyst-Sample Properties



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Order No.:
Report #: 987797
Phone:
Fax:

Received: May 8, 2023 1:43 PM
Due: May 15, 2023
Priority: 5 Day
Contact Name: [redacted]

Project Name:
Project ID: VIC_0445_PFASOMP

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0445_QC200_230501	May 01, 2023		Water	M23-My0021679		X
2	0445_QC201_230501	May 01, 2023		Water	M23-My0021680		X
3	0445_QC202_230502	May 02, 2023		Water	M23-My0021681		X
4	0445_QC203_230503	May 03, 2023		Water	M23-My0021682		X
5	0445_QC204_230503	May 03, 2023		Water	M23-My0021683		X
6	0445_QC205_230504	May 04, 2023		Water	M23-My0021684		X
7	0445_QC206_230505	May 05, 2023		Water	M23-My0021685		X
8	0445_QC207_230505	May 05, 2023		Water	M23-My0021686		X

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Company Name: Stantec Australia Pty Ltd (VIC)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:
Project ID: VIC_0445_PFASOMP

Order No.:
Report #: 987797
Phone:
Fax:

Received: May 8, 2023 1:43 PM
Due: May 15, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
9	0445_QC208_230505	May 05, 2023		Soil	M23-My0021687	X	X
10	0445_QC209_230505	May 05, 2023		Water	M23-My0021688		X
11	0445_QC210_230505	May 05, 2023		Soil	M23-My0021689	X	X
Test Counts						2	11

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Stantec Australia Pty Ltd (VIC)
Contact name:	[redacted]
Project name:	Not provided
Project ID:	VIC_0445_PFASOMP
Turnaround time:	5 Day
Date/Time received	May 8, 2023 1:43 PM
Eurofins reference	987797

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] [redacted] **or by email:** [redacted]

Results will be delivered electronically via email to [redacted]

Note: A copy of these results will also be delivered to the general Stantec Australia Pty Ltd (VIC) email address.

Global Leader - Results you can trust

Cardno

Chain of Custody

Sheet 1 of 1

PM Name: [redacted]

Phone: +61 3 9831 6126 Fax: +61 3 8415 7788 Mobile: +61 4 2087 7350

Address: Level 4, 501 Swanston Street, Melbourne, Vic 3000

PM Email: [redacted]

Results Email (please email results to all listed):
[redacted]

Project Number: VIC_0445_PFASOMP

Laboratory (name, phone,fax no & contact person) : Eurofins
Attn: Michael Morrison,michaelmorrison@eurofins.com, 03 8564 5933

Sample ID	Laboratory ID	Container	Sampling Date	Sampling Time	Sample Matrix: Water	Sediment				Sample preservation: Ice				Analysis: Per- and Polyfluoroalkyl Substances (PFASs)										HOLD
0445_QC200_230501		2x bottles	1/05/2023		x					x				x										
0445_QC201_230501		2x bottles	1/05/2023		x					x				x										
0445_QC202_230502		2x bottles	2/05/2023		x					x				x										
0445_QC203_230503		2x bottles	3/05/2023		x					x				x										
0445_QC204_230503		2x bottles	3/05/2023		x					x				x										
0445_QC205_230504		2x bottles	4/05/2023		x					x				x										
0445_QC206_230505		2x bottles	5/05/2023		x					x				x										
0445_QC207_230505		2x bottles	5/05/2023		x					x				x										
0445_QC208_230505		1x container	5/05/2023			x				x				x										
0445_QC209_230505		2x bottles	5/05/2023		x					x				x										
0445_QC210_230505		1x container	5/05/2023			x				x				x										

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples.

Sampler name: (print and signature) [redacted] Date 8/5/2023

Relinquished by (Sampler): (print and signature) Maya Brannan 8/5/2023	Date	Time	Received by (Courier/Lab): (print and signature)	Date	Time
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time

Please supply results electronically in spreadsheet and ESDAT files.
Turn around time: (24 hour/48 hour/3 days/5 days)

Please circle

Received by: [redacted] ALS
08/05/23 — 13:48

9/05/23

Farjad Sadiq
987797

Revision 2
Approved 2 December 2016

Tyrone Gowans

From: [redacted]
Sent: Thursday, 11 May 2023 2:25 PM
To: [redacted]#AU_CAU001_EnviroSampleVic; Enviro Reception
Subject: RE: DEF19008 - Bandiana lab report 987797

Follow Up Flag: Follow up
Flag Status: Flagged

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.
Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

[redacted]

Would you be able to update project name on lab report 987797 to **VIC_0445_PFASOMP**?

Thanks,

[redacted]

Phone: +61 3 9937 0780

[redacted]

Stantec Australia
Level 4, 501 Swanston Street Melbourne Victoria 3000 Australia





Stantec acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures and to Elders past and present.

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

Please consider the environment before printing this email.

From: [redacted]
Sent: Tuesday, May 9, 2023 1:51 PM
To: [redacted]>; #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>; Enviro Reception <EnviroReception@eurofins.com>
Subject: RE: DEF19008 - Bandiana sample pick up

Hi Maya
We are yet to receive this one.

Tyrone- can you check if it is in the que to be logged?

APPENDIX

D

FIELD RECORDS & CALIBRATION CERTIFICATES

Event	Location	Frequency	Property	Easting	Northing	Monitoring Date	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Hydrasleeve Deployment Depth (mBTOC)[1]	Other Observations on Bore/Site	Temp (C°)	DO (mg/L)	EC (us/Cm)	TDS	pH	Eh (mV)
E4	MW009	Bi-Annual	East BMA	495603.37	5999848.02	5/05/23	12.43	166.28	6.971	159.309	11.11	Clear, no odour	15.7	3.6	266	172.9	6.28	153.3
E4	MW012	Bi-Annual	East BMA	495534.14	5999634.04	5/05/23	10.67	167.36	7.82	159.540	9.80	Clear, no odour	17.1	3.69	257.1	167.115	6.04	188.1
E4	MW016	Bi-Annual	East BMA	495641.49	5999946.12	5/05/23	10.94	166.16	7.13	159.030	9.00	Cloudy , no odour, sediment in base of sleeve	15.8	3.26	264	171.6	5.84	181.5
E4	MW018	Bi-Annual	East BMA	495834.70	5999717.39	5/05/23	10.57	165.43	6.52	158.910	9.42	Clear, no odour	15	3.18	760	494	6.42	169.7
E4	MW020	Bi-Annual	East BMA	495826.29	5999801.5	6/05/23	7	165.41	6.501	158.909	NA - sampled by bailer	Clear, no odour, bailed dry	16	2.11	370.4	240.76	6.13	35.8
E4	MW029	Bi-Annual	East BMA	495426.45	5999463.69	5/05/23	11.24	168.11	7.73	160.380	9.00	Cloudy , no odour	15.7	5.83	178.3	115.895	5.69	199.6
E4	MW034	Bi-Annual	East BMA	495753.66	5999858.29	5/05/23	NM	166.63	7.73	158.900	9.00	Brown , no odour, sediment in base of sleeve	16.4	3.1	265.1	172.315	6.15	182.4
E4	MW035	Bi-Annual	East BMA	495683.72	5999911.25	5/05/23	11.39	166.22	7.245	158.975	11.00	Clear, no odour, sandy sediment in base of sleeve	14.7	1.52	270.6	175.89	5.75	175.8
E4	MW042	Bi-Annual	East BMA	495677.04	5999879.86	5/05/23	18.38	166.62	7.517	159.103	16.00	Clear, no odour	15.1	1.66	270.2	175.63	5.8	169.7
E4	MW043	Bi-Annual	East BMA	495680.27	5999879.94	5/05/23	13.42	166.55	7.425	159.125	11.60	Clear slight cloudy	15.1	3.95	258.1	167.765	5.93	158.9
E4	MW046_D	Bi-Annual	East BMA	495752.45	5999855.99	5/05/23	22.42	166.49	8.163	158.327	20.00	Clear, no odour	16.9	0.81	287.3	186.745	5.85	157.9
E4	MW046_I	Bi-Annual	East BMA	495752.45	5999855.99	5/05/23	14.7	166.48	7.568	158.912	12.97	Clear, no odour	17.8	1.3	293.2	190.58	5.89	155.5
E4	MW052	Bi-Annual	East BMA	495251.08	5999549.74	5/05/23	9.7	168.49	7.654	160.836	10.00	Cloudy , no odour, sediment throughout sleeve	16.8	1.31	114.1	74.165	5.46	26.9
E4	MW304	Bi-Annual	South BMA	491289.32	6000521.98	4/05/23	22.28	176.131	15.929	160.202	20.00	Clear slightly cloudy, no odour	16.2	1.59	13567	8818.55	6.27	127.3
E4	MW307	Bi-Annual	South BMA	491307.09	6000261.17	4/05/23	27.99	181.086	20.025	161.061	26.30	Brown cloudy, no odour , lid of stick up damaged	19.4	2.25	5023	3264.95	6.19	-30.3
E4	MW312	Bi-Annual	South BMA	491682.00	6000520	4/05/23	17.95	175.841	11.332	164.509	16.60	Brown , no odour	15.1	6.36	4635	3012.75	7.1	157.1
E4	MW342	Bi-Annual	North BMA	493664.00	6000189	4/05/23	17.73	180.605	13.29	167.315	16.51	Brown , no odour, lid of stick up damaged	17.2	4.31	1858	1207.7	8.13	102.2
E4	MW345	Bi-Annual	North BMA	494560.00	5999979	5/05/23	5.56	168.316	4.347	163.969	5.35	Brown , no odour	17.4	1.77	9049	5881.85	6.44	-20.6
E4	MW346	Bi-Annual	North BMA	494621.00	6000250	4/05/23	8.79	166.944	3.117	163.827	8.80	Clear, no odour	17.6	2.77	1911	1242.15	6.4	106.3
E4	MW350_D	Bi-Annual	East BMA	495299.30	5999571.3	5/05/23	20.63	168.229	7.991	160.238	19.00	Clear, no odour	14.2	2.96	251.2	163.28	6.06	170.9
E4	MW350_S	Bi-Annual	East BMA	495299.30	5999571.3	5/05/23	10.13	168.233	7.781	160.452	9.03	Brown , no odour	15.8	5.7	296.9	192.985	5.75	166.3
E4	MW351	Bi-Annual	East BMA	495382.00	6000184	5/05/23	8.87	164.79	5.502	159.288	7.80	Clear, no odour	15.5	2.58	150.9	98.085	5.8	176.2
E4	MW352	Bi-Annual	Offsite	495498.59	6000070.77	5/05/23	9.89	164.493	5.35	159.143	8.83	Cloudy , no odour	16.1	2.52	158.9	103.285	5.94	158.1
E4	MW353	Bi-Annual	East BMA	495479.00	5999808	5/05/23	7.65	166.625	7.15	159.475	NA - sampled by bailer	Brown cloudy, no odour , bailed dry	18.9	2.63	599	389.35	6.08	168.9
E4	MW354	Bi-Annual	East BMA	495767.20	5999625.8	5/05/23	11.07	166.625	7.182	159.443	10.00	Brown , strong sewage odour, lots of ants in well and sleeve	16	2.31	281.7	183.105	6.21	-71.1
E4	MW356	Bi-Annual	Offsite	496059.80	6000518.4	5/05/23	3.79	156.882	1.97	154.912	2.91	Brown , no odour, sediment in water	14.9	0.7	110.1	71.565	6.61	-45.7
E4	MW357	Bi-Annual	Offsite	495793.41	6001682.22	4/05/23	6.4	156.243	2.884	153.359	5.00	Green grey , no odour	17.1	1.13	186.1	120.965	6.1	-30.3
E4	MW360	Bi-Annual	Offsite	490936.64	6001498.75	4/05/23	13.1	164.89	8.012	156.878	11.00	Cloudy , no odour	17.8	4.13	918	596.7	7.03	155.6
E4	MW361	Bi-Annual	Offsite	490943.84	6003056.8	4/05/23	6.36	153.716	1.695	152.021	4.00	Cloudy , no odour	18.9	4.12	316.1	205.465	6.17	107.3
E4	MW403	Bi-Annual	Offsite	495312.20	5999591.49	5/05/23	10.15	166.926	6.486	160.440	9.00	Cloudy , no odour	16.4	5.11	297.4	193.31	5.75	193.9
E4	MW404	Bi-Annual	Offsite	495269.66	5999632.7	5/05/23	10.25	166.617	6.455	160.162	9.00	Clear, no odour	17.8	2.72	366.7	238.355	5.83	169.7
E4	MW416	Annual[2]	Onsite	492206.45	5999857.15	6/05/23	30	187.72	24.251	163.469	28.95	New well to replace MW326. Brown , no odour, sediment thorughout sleeve	15.1	3.74	1294	841.1	6.31	142.9
E4	OTH019	Bi-Annual	Offsite	-	-	2/05/23	-	-	-	-	NA - sampled by tap	Clear, no odour	15.9	3.81	369.4	240.11	6.01	162.3

1. As measured from the top of the Hydrasleeve
2. MW416 was sampled in the May event and will be again in the August-October event (normal frequency) to provide an additional data point as it could not be sampled in October 2022

Surface Water Field Data Records

Location ID	Property	Easting	Northing	Monitoring Date	Water body depth (m)	Sample Depth (m)	Flow Rate	Flow Rate (m/s)	Water Colour	Turbidity	Channel Width (m)	Water Body Condition	Other Observations	Temp (Co)	DO (mg/L)	EC (us/Cm)	TDS (mg/L)	pH	Eh (mV)
SW302	On-base	491217.00	5999668.00	6/05/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
SW307	On-base	491296.00	5999663.00	6/05/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
SW310	On-base	491245.00	6000071.00	3/05/2023	0.1	0.01	No	0	Cloudy brown	Low	0.4	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	15	8.18	31.5	20.475	6.81	131.3
SW311	On-base	491280.00	6000430.00	6/05/2023	0.1	0.1	No	0	Brown	High	0.5	Culvert	No foaming, no microorganisms, no algae, sheen on surface, no odour	11.8	6.15	33	21.45	6.58	115.2
SW313	On-base	491321.00	6000251.00	1/05/2023	0.05	0.01	No	0	Brown	Medium	1	Pond	No foaming, tadpoles, no algae, white sheen on surface, no odour	14.7	3.7	114.3	74.295	6.28	142.9
SW316	On-base	491421.00	6000456.00	3/05/2023	0.15	0.1	No	0	Cloudy	No	0.5	Culvert	No foaming, no microorganisms, no algae, no sheen, no odour	15.4	8.02	49.4	32.11	6.63	128.8
SW321	On-base	491612.00	6000381.00	1/05/2023	0.15	0.1	No	0	Brown	Low	0.6	Culvert	No foaming, no microorganisms, no algae, no sheen, no odour	14.3	8.3	139.2	90.48	7.33	129.9
SW322	On-base	491706.00	6000527.00	4/05/2023	0.1	0.01	No	0	Brown	Low	0.5	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	10.8	7.29	153.4	99.71	6.12	136
SW323	On-base	491860.00	6000478.00	4/05/2023	0.8-1	0.3	No	0	Cloudy slight brown	Low	4	Pond	No foaming, no microorganisms, no algae, no sheen, no odour	12.5	6.3	61.5	39.975	6.06	149.2
SW324	On-base	491976.00	6000279.00	1/05/2023	0.5	0.3	No	0	Brown cloudy	Low	1	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	14.1	3.47	134.9	87.685	6.22	157
SW326	On-base	491968.00	5999998.00	1/05/2023	0.3	0.1	No	0	Cloudy brown	No	0.5	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	14.3	4.97	236.3	153.595	6.61	108.9
SW332	On-base	492126.00	6000156.00	3/05/2023	0.1	0.05	Low	0.2	Cloudy	No	0.3	Culvert	No foaming, no microorganisms, no algae, no sheen, no odour	16.3	7.23	58	37.7	6.73	118.6
SW333	On-base	492177.00	6000246.00	3/05/2023	0.7	0.3	Low	0.1	Cloudy	Low	0.4	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	13.9	8.62	61.3	39.845	6.5	80.3
SW336	On-base	492186.00	5999832.00	4/05/2023	0.5	0.1	No	0	Black green	High	3	Pond	No foaming, no microorganisms, algae, no sheen, no odour	17.1	7.07	37.8	24.57	7.22	149.4
SW338	On-base	492273.00	6000114.00	2/05/2023	0.4	0.1	No	0	Clear	No	15	Pond	No foaming, no microorganisms, no algae, no sheen, no odour	16.6	8.21	407.6	264.94	8.21	70.3
SW340	On-base	492352.00	6000181.00	2/05/2023	0.3	0.1	No	0	Clear slightly brown	No	1	Culvert	No foaming, no microorganisms, no algae, no sheen, no odour	12.1	5.98	110.3	71.695	6.6	147.6
SW346	On-base	492606.00	6000048.00	5/05/2023	1	0.1	No	0	Cloudy brown	Low	3	Pond	No foaming, no microorganisms, no algae, no sheen, no odour	15	7.13	62.1	40.365	6.75	131.4
SW349	On-base	492827.00	5999999.00	2/05/2023	1.5	0.3	No	0	Cloudy	Low	10	Pond	No foaming, no microorganisms, no algae, no sheen, no odour	16	3.76	57.8	37.57	6.49	124.7
SW355	On-base	492997.00	5999947.00	4/05/2023	1	0.1	No	0	Cloudy	Medium	12	Pond	No foaming, no microorganisms, no algae, no sheen, no odour	15.9	6.05	56.2	36.53	7.07	157.5
SW370	On-base	494029.00	5999774.00	4/05/2023	0.1	0.1	No	0	Cloudy brown	Medium	1	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	13.4	8.18	85.1	55.315	7.67	77.7
SW374	On-base	494552.00	6000001.00	5/05/2023	0.2	0.1	No	0	Brown	Medium	1.5	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	12.5	8.97	163.8	106.47	7.04	33.6
SW375	On-base	494650.00	6000239.00	5/05/2023	0.6	0.1	No	0	Brown	Medium	4	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	11.3	5.5	68.2	44.33	6.72	73.6
SW379	On-base	495222.00	5999565.00	6/05/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
SW380	On-base	495340.00	5999652.00	6/05/2023	0.1	0.1	Low	0.02	Clear	No	4	Culvert	No foaming, no microorganisms, no algae, no sheen, no odour	12.3	7.18	23.3	15.145	7.08	83.9
SW382	On-base	495424.00	6000092.00	5/05/2023	0.6	0.1	No	0	Cloudy	Low	8	Pond	No foaming, no microorganisms, no algae, no sheen, no odour	12	5.57	18.2	11.83	6.2	158.7
SW387	On-base	496084.00	5999677.00	6/05/2023	0.1	0.1	High	1	Clear	No	1.5	Culvert	No foaming, no microorganisms, no algae, no sheen, no odour	12.2	7.82	32.1	20.865	7.12	99.9
SW388	On-base	496272.00	5999749.00	6/05/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
SW390	Off-base	497942.00	5998177.00	4/05/2023	0.7	0.1	High	0.8	Clear	No	5	River	Foaming over rapids, no microorganisms, no algae, no sheen, no odour	12	11.15	82.1	53.365	8.11	93.9
SW393	Off-base	496236.00	5999368.00	4/05/2023	0.8	0.1	High	1	Cloudy	Low	2	Creek	Foaming near edge and rapids, no microorganisms, no algae, no sheen, no odour	11.4	11.85	258	167.7	7.55	167.6
SW395	Off-base	496191.00	5999895.00	6/05/2023	0.6	0.1	Low	0.01	Cloudy	Low	6	River	No foaming, no microorganisms, algae on plants in water, no sheen, no odour	11.4	4.82	115.6	75.14	6.73	118
SW396	Off-base	-	-	6/05/2023	1	0.1	No	0	Cloudy	Low	8	Lake	No foaming, no microorganisms, no algae, no sheen, no odour	11.5	4.33	383.3	249.145	7.17	135
SW397	Off-base	-	-	6/05/2023	0.6	0.1	No	0	Cloudy	Low	7	Lake	Foaming around edge of water body not at sample location, no microorganisms, no algae, no sheen, no odour	11.7	6.64	346.9	225.485	7.2	96.4
SW398	Off-base	496369.00	6000178.00	6/05/2023	1	0.1	High	1	Clear	No	6	River	No foaming, no microorganisms, no algae, no sheen, no odour	10.9	7.53	38.7	25.155	7.35	53.9
SW400	Off-base	-	-	5/05/2023	1	0.1	No	0	Cloudy	Low	5	Lake	No foaming, no microorganisms, no algae, no sheen, no odour	10.9	7.1	145.8	94.77	6.96	99.7
SW401	Off-base	-	-	6/05/2023	0.5	0.05	No	0	Brown	Medium	6	Lake	No foaming, no microorganisms, no algae, no sheen, no odour	10.4	2.51	360.1	234.065	6.49	39
SW403	Off-base	495794.00	6000721.00	5/05/2023	0.4	0.1	No	0	Cloudy	Low	5	River	Foaming, no microorganisms, no algae, sheen on surface, no odour	41.1	7.35	159.8	103.87	6.87	30.6
SW404	Off-base	495932.00	6000777.00	4/05/2023	1.5	0.1	High	0.8	Clear	No	6	River	No foaming, no microorganisms, no algae, no sheen, no odour	12.8	8.44	50.6	32.89	7.28	151
SW405	Off-base	495713.70	6000917.23	6/05/2023	1	0.1	No	0	Clear	No	7	River	No foaming, no microorganisms, no algae, no sheen, no odour	11.9	5.36	392.7	255.255	6.91	114
SW409	Off-base	495342.00	6000744.00	4/05/2023	0.5	0.1	No	0	Cloudy	Low	1.5	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	12	6.82	98.7	64.155	7.07	163.8

SW412	Off-base	495462.23	6001117.47	5/05/2023	0.4	0.1	No	0	Brown	Low	3	Creek	No foaming, no microorganisms, no algae, no sheen, organic odour, no odour	12.9	5.45	185.4	120.51	6.6	120.4
SW416	Off-base	495852.00	6001776.00	4/05/2023	1.5	0.1	High	1	Clear	Low	4	River	Foaming, microorganisms, algae, sheen, no odour	12.8	6.3	48.2	31.33	6.78	28.6
SW424	Off-base	491511.00	6000639.00	2/05/2023	0.2	0.1	No	0	Cloudy	Low	3	Culvert	No foaming, no microorganisms, algae, no sheen, no odour	14.1	4.15	1455	945.75	6.05	117.4
SW427	Off-base	490948.72	6001301.83	4/05/2023	0.2	0.1	Low	0	Clear brown tinge	No	3	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	13.7	7.4	87.6	56.94	6.67	115
SW430	Off-base	490913.00	6002786.00	4/05/2023	0.3	0.1	Medium	0.25	Clear slight cloudy	Low	1.5	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	15.2	8.7	121.3	78.845	7.55	107.6
SW431	Off-base	490883.28	6003648.07	2/05/2023	0.2	0.1	Medium	0.2	Clear	No	1.5	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	15.6	4.44	124.3	80.795	6.77	32
SW432	Off-base	490789.00	6003749.00	4/05/2023	0.5	0.1	High	1	Clear	No	2	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	14.6	7.7	104.4	67.86	6.86	104
SW434	Off-base	490476.00	6003891.00	2/05/2023	0.5-1	0.1	No	0	Cloudy	No	3	River	No foaming, no microorganisms, no algae, no sheen, no odour	17.5	7.23	89.8	58.37	7.56	106.4
SW448	On-base	491960.62	5999684.39	3/05/2023	0.05	0.01	Low	0.1	Brown	No	0.5	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	14.4	7.23	41.2	26.78	6.22	165.6
SW462	Off-base	495777.32	6001658.16	4/05/2023	0.5	0.1	Low	0.1	Cloudy	Low	2	Creek	No foaming, no microorganisms, no algae, no sheen, no odour	13.3	6.1	1523	989.95	6.77	39.4
SW463	Off-base	491216.27	6000546.54	2/05/2023	0.2	0.1	No	0	Brown	Medium	1	Culvert	Minor foaming at pond edges, mosquitos on surface, no algae, no sheen, no odour	15.4	4.57	68.8	44.72	6.23	125.3
SW470	Off-base	496154.23	6000093.25	6/05/2023	0.8	0.1	Low	0.1	Cloudy	Low	8	River	No foaming, no microorganisms, no algae, no sheen, no odour	11.3	4.81	124.2	80.73	6.95	100.1
SW471	Off-base	-	-	6/05/2023	0.5	0.1	No	0	Cloudy	Low	5	River	No foaming, no microorganisms, no algae, no sheen, no odour	10.5	4.81	199	129.35	6.5	92.2
SW487	Off-base	495826.91	6000046.42	6/05/2023	0.6	0.1	No	0	Cloudy	Low	7	Lake	No foaming, no microorganisms, no algae, sheen around edge of water body, no odour	11.7	9.07	345	224.25	7.33	75.7

Sediment Field Data Records

Location ID	Property	Easting	Northing	Monitoring Date	Other Observations
SD323	On-base	491860.00	6000478.00	4/05/2023	Silty Clay, brown orange, low to moderate plasticity, wet, roots and reeds, no odour , no staining
SD346	On-base	492606.00	6000048.00	5/05/2023	Silty Clay, fine grained sand, grey mottled orange brown, wet, moderate plasticity, organic matter, reeds and roots, no odour, no staining
SD355	On-base	492997.00	5999947.00	4/05/2023	Silty sandy clay, grey brown, soft, rootlets and leaves, high plasticity, wet, no odour, no staining
SD375	On-base	494650.00	6000239.00	5/05/2023	Sandy silty clay, grey brown with orange mottling, wet, moderate to high plasticity, no odour, no staining
SD382	On-base	495424.00	6000092.00	5/05/2023	Silty Clay, red brown, with coarse grained sands, wet, low plasticity, root and reeds, no odour, no staining
SD395	Off-base	496191.00	5999895.00	5/05/2023	Sandy clay, high plasticity, firm, wet, dark brown, no odour, no staining
SD396	Off-base	-	-	6/05/2023	Silty Clay, wet, low plasticity, dark brown, organic matter, slight organic odour
SD397	Off-base	-	-	5/05/2023	Sandy gravelly clay, grey brown, moderate plasticity, wet, large gravels and pebbles, no odour, no staining
SD400	Off-base	-	-	2/05/2023	Sandy silty clay, grey brown, high plasticity, course grained sands, leaves, no odour, no staining
SD412	Off-base	495462.23	6001117.47	2/05/2023	Silty Clay, wet, dark brown, moderate plasticity, roots, organic odour, no staining
SD424	Off-base	491511.00	6000639.00	6/05/2023	Silty clay, brown black, medium plasticity, wet, no gravels or sand, no odour, no staining
SD463	Off-base	491216.27	6000546.54	6/05/2023	Silty Clay, wet, dark brown with mottled orange, high plasticity, organic odour

F3.04 – Groundwater Sampling Field Record

Site / Project: PFAS Investigation and Management Plan	Client: Department of Defence	Sampled By: NM
Job No: DEF19008	Bore ID: MW020	Date: 07/05/2023
Bore / Site Details		
Bore Condition: Good Is it Locked:	If not locked, explanation?	Type of Protection Cap / Cover:
Bore Depth (bTOC): 7	Inner casing/ screen type & diameter:	Screen interval (bgl):
SWL (bTOC): 6.501	Pump Depth:	SWL Date/Time: 07/05/2023 11:05 AM
Other Observations on Bore/ Site: Hand bailed until dry		
Bore Purge Data		
Purge method: Hand Bailing	Bore Volume (L):	Purge Date: 07/05/2023
Purge rate (L/min): 1	Total Purge volume (L): 1	LNAPL / PSH Thickness (mm):

Purge Field Physicochemical Measurements:

	Reading 1	Reading 2	Reading 3	Reading 4	Reading 5	Reading 6	Reading 7	Reading 8	Reading 9	Reading 10	Reading 11	Reading 12
Start Time:	11:05	11:10	11:15	11:20	11:25	11:30	11:35	11:40				
DO (mg/L) ±10% (or ±0.2 if DO<2 mg/L)	2.15	2.11										
EC (µS/Cm) ±3%	377.5	370.4										
pH ±0.1	6.14	6.13										
Eh (mV) ±10mV	1.5	35.8										
Temp (°C)	17.1	16										
SWL (m) after												
Cum. Volume (L)												
Water Colour	Cloudy	Cloudy										
Turbidity ±10%	Low	Low										
Other Observations / Notes	No odour	Same										

Sample Container & Preservation Data									
Number of sample container: (Include QC samples)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Container Volume									
Container Type									
Filtration									
Preservation									
Number of sample container: (Include QC samples)	10	11	12	13	14	15	16		
Container Volume									
Container Type									
Filtration									
Preservation									
Sample Number (for Lab ID):									
QC Dup Sample No.:									

Bore Damage Images	Bore Images

F3.04 – Groundwater Sampling Field Record

Site / Project: PFAS Investigation and Management Plan	Client: Department of Defence	Sampled By: NM
Job No: DEF19008	Bore ID: MW323	Date: 02/02/7073
Bore / Site Details		
Bore Condition: Good Is it 5ocLed:	If not locLedke, planationx	?ype of Protection Cap / Cover:
Bore DeptT hb?(CO	Inner casing/ screen type) diameter:	Screen interval hbglO
SW5 hb?(CO &.701	Pump DeptT:	SW5 Date/?ime: 02/02/7073 10:18 AM
(tTer (bservations on Bore/ Site: Bailed dry after 6 5		
Bore Purge Data		
Purge metTod: Hand Bailing	Bore Volume h5O	Purge Date: 02/02/7073
Purge rate h5/minO 1	?otal Purge volume h5O 6	5NAP5 / PSH ?TicLness hmmO

Purge Field Physicochemical Measurements:

	Reading 1	Reading 2	Reading 3	Reading 4	Reading 5	Reading 6	Reading 7	Reading 8	Reading 9	Reading 10	Reading 11	Reading 12
Start Time:	10:18	10:73	10:78	10:33	10:38	10:43	10:48	10:23				
DO (mg/L) ±10% (or ±0.2 if DO<2 mg/L)	7.29	1.23	1.67	1.&8	1.9&	7.11	7.63					
EC (□S/Cm) ±3%	919	813	&9&	&&3	&78	&09	299					
pH ±0.1	6.02	6.11	6.17	6.14	6.1&	6.1&	6.08					
Eh (mV) ±10mV	18&.2	184.8	184	187	180.7	168	168.9					
Temp (°C)	18.6	18.&	19	19.1	18.2	18.3	18.9					
SWL (m) after												
Cum. Volume (L)												
Water Colour							Cloudy					
Turbidity ±10%							Medium					
Other Observations / Notes							No odour					

Sample Container & Preservation Data									
Number of sample container: (Include QC samples)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Container Volume									
Container ?ype									
Filtration									
Preservation									
Number of sample container: Hnclude QC samplesO	10	11	17	13	14	12	16		
Container Volume									
Container ?ype									
Filtration									
Preservation									
Sample Number Hfor 5ab IDO									
QC Dup Sample No.:									

F3.01 Equipment Calibration Report
YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus
Serial Number: 19H102165

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent?
Carry case	☑	☐
Attached sensors (x4)	☑	☐
Spare Batteries	☑	☐
Connector Cable	☑	☐
Instruction Manual	☑	☐

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	☑	☑
Operations check (screen functions)	☑	☑
Temperature check	☑	☑

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	
pH	pH: Buffer Solution 7.00	7.00	
pH	pH: Buffer Solution 10.00	10.00	
Redox	Standard ORP solution	____ mV @ __ °c	____ mV @ ___°c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	
O_2	Sodium Sulphite for 0% Dissolved Oxygen	0%	
Conductivity	Standard Conductivity Solution	____ µS/cm @ __ °c	____ mV @ __°c

Checked/ Calibrated by: [redacted]

Signed: [redacted]

Date: 3/5/2023

[1] YSI Professional Plus – Calibration Tips; Rev A, December 2010.

Equipment Calibration Report

Equipment Report – TPS 90FLMV Water Quality Meter

This TPS 90FLMV Water Quality Meter (*Unit*) has been performance checked as per the manufacture's guidelines[1].

The Unit has been checked for and comprises of the following items:

Present	Damaged	Item
☒	☐	Orange carry case
☑	☐	90FLMV Unit
☐	☐	Dissolved Oxygen (YSI5739) Sensor
☐	☐	pH Sensor
☐	☐	Conductivity/ TDS/ Temperature Sensor
☐	☐	Redox (ORP) Sensor
☐	☐	Battery Charger
☐	☐	Syringe with storage solution (pH 2) for pH & ORP sensors, and a moist sponge for storage of DO sensor.
☐	☐	Instruction Manual
☐	☐	Calibration solutions kit

The following tests and operational checks have been conducted on the Unit:

Test Completed	Test Passed	Item
☐	☐	WQM Unit Cleaned & Decontaminated using Decon 90
☐	☐	Operations check (screen functions)
☐	☑	Battery Voltage <7.2 V (_____V)

The Unit has been performance checked and calibrated as follows:

Parameter	Calibration Values		
Temperature	Thermometer: 13 °C	Instrument: 12 °C	☐ Calibrated
Dissolved Oxygen	☒ 100% Saturation in Air	☐ 0.00 ppm in Na_2SO_4solution	
Conductivity	☒ 0 µS/cm	☒ 2,760 µS/cm	
pH	☒ pH 4.00	☐ pH 6.88	☒ pH 9.22

Checked / Calibrated by: [redacted]

Signed: [redacted]

Date: 1/5/23

[1] 90-FLMV Manual; Version 6.02, TPS, 2006.

Unit Type: YSI ProPlus
Serial Number:

Job Number: _____

Date of Bump Test	Ambient Air Oxygen Calibration	Zero % Oxygen Solution Calibration	Standard Concentrations	Bump Test Reading	Bump Test Readings Accepted?	Test by (Name)	(Signature)
2/05/23	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 Y / N pH 10.00 Y / N EC: _µS/cm @ _°C Y / N Redox: 256 mV @ 15 °c Y / N	pH 4.00: 3.78 pH 7.00: 6.95 pH 10.00: 9.91 EC: 2496 @ 13° Redox: 259 @ 13°	(Y) / N (Y) / N (Y) / N (Y) / N Y / N	[redacted]	[redacted]
3/05/23	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 (Y) / N pH 10.00 (Y) / N EC: 2496 µS/cm @ 5 °C (Y) / N Redox: 265 mV @ 5 °c (Y) / N	pH 4.00: 3.63 - Recalibrated pH 7.00: 7.18 pH 10.00: 10.4 - Recalibrated EC: 8920 Redox: 259.7	(Y) / N (Y) / N (Y) / N (Y) / N (Y) / N	[redacted]	[redacted]
4/05/23	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 (Y) / N pH 10.00 (Y) / N EC: 2496 µS/cm @ 25 °C Y / N Redox: 254 mV @ 5 °c Y / N	pH 4.00: 3.91 pH 7.00: 6.81 pH 10.00: 9.88 EC: 2030 @ 5°C Redox: 255.5 @ 5°	(Y) / N (Y) / N (Y) / N (Y) / N (Y) / N	[redacted]	[redacted]
5/05/23	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 (Y) / N pH 10.00 (Y) / N EC: 2496 µS/cm @ 25 °C (Y) / N Redox: 254 mV @ 5 °c (Y) / N	pH 4.00: 3.92 pH 7.00: 7.10 pH 10.00: 9.88 EC: 2033 @ 4°C 5°C Redox: 254.9 @ 5°	(Y) / N (Y) / N (Y) / N (Y) / N (Y) / N	[redacted]	[redacted]
6/05/23	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 (Y) / N pH 10.00 (Y) / N EC: _µS/cm @ _°C (Y) / N Redox: 254 mV @ 5 °c (Y) / N	pH 4.00: 3.91 pH 7.00: 6.80 pH 10.00: 9.90 EC: 20581 @ 5°C Redox: 255.8 @ 5°C	(Y) / N (Y) / N (Y) / N (Y) / N (Y) / N	[redacted]	[redacted]
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: _µS/cm @ _°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: _µS/cm @ _°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00. pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: _µS/cm @ _°C Y / N Redox. ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00 EC: Redox:	Y / N Y / N Y / N Y / N Y / N		

Unit Type: YSI ProPlus
Serial Number:

Job Number: ___________

Date of Bump Test	Ambient Air Oxygen Calibration	Zero % Oxygen Solution Calibration	Standard Concentrations	Bump Test Reading	Bump Test Readings Accepted?	Test by (Name)	(Signature)
4/5	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y)/N pH 7.00 (Y)/N pH 10.00 (Y)/N EC: 1287 µS/cm @ 25°C (Y)/N Redox: ___ mV @ __°c (Y)/N	pH 4.00: 4.01 pH 7.00: 6.98 pH 10.00: 9.89 EC: 259.2 @ 7.7°C Redox: 9231 @ 10°C	(Y)/N (Y)/N (Y)/N (Y)/N (Y)/N	[redacted]	[redacted]
5/5	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y)/N pH 7.00 (Y)/N pH 10.00 (Y)/N EC: 8117 µS/cm @ 5°C (Y)/N Redox: 242 mV @ 10°c (Y)/N	pH 4.00: 4.06 pH 7.00: 7.04 pH 10.00: 9.95 EC: 8187 Redox: 262 @ 10°C	(Y)/N (Y)/N (Y)/N (Y)/N (Y)/N	[redacted]	[redacted]
6/5	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y)/N pH 7.00 (Y)/N pH 10.00 (Y)/N EC: " µS/cm @ " °C (Y)/N Redox: " mV @ " °c (Y)/N	pH 4.00: 4.04 pH 7.00: 6.90 pH 10.00: 9.89 EC: 9000 Redox: 255.5	(Y)/N (Y)/N (Y)/N (Y)/N (Y)/N	[redacted]	[redacted]
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: __µS/cm @ __°C Y / N Redox: ___ mV @ __°c Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		

Bore Damage Images	Bore Images

APPENDIX

E

DATA QUALITY REVIEW

Data Quality Review
Bandiana Military Area, VIC

This Appendix reviews the Quality Assurance (QA) and Quality Control (QC) documentation. Quality assurance encompasses the actions, procedures, checks and decisions undertaken to ensure sample integrity and representativeness, and the reliability and accuracy of analysis results. The QA documentation should also include an indication of the Data Quality Objectives sought in relation to each significant action, test or process involved in the Assessment.

QC activities measure the effectiveness of the QA procedures by undertaking testing, and then comparing results to previously established objectives. QC work will include the internal laboratory testing as well as results of QC samples submitted such as trip blanks and duplicates. The quality of the information and/or data is deemed satisfactory when the QC results demonstrate that agreed objectives have been met.

Cardno undertook a review of its QA/QC as part of the data validation exercise. The findings are summarised below.

QA/QC Aspects	Evidence and Evaluation
	QA Documentation
Sampling and Analysis Quality Plan and Data Quality Objectives	Cardno was engaged by Department of Defence (the client) to carry out the PFAS Ongoing Monitoring Plan (OMP) at Bandiana Military Area (the Site). The monitoring event commenced on 1 May and concluded 6 May 2023. The monitoring event was completed in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP) of 27 April 2023 (Our Ref: OMP002_Bandiana_ SAQP_Rev1.4). The assessment was carried out in general compliance with the following: ▪ Australian Standard AS 4482-2005 Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds. ▪ Department of Defence (2021), Contamination Management Manual (DCMM), Annex L – Data Management, August 2019, Amended June 2021. ▪ Department of Defence (2019), Pollution Prevention Guideline - Routine Water Quality Monitoring, Department of Defence, Department of Energy, 2018, Quality System Manual Schedule B15. ▪ EPA Victoria (2009), Industrial Waste Resources Guidelines, Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 701. ▪ Heads of Environmental Protection Authority's Australia and New Zealand (HEPA) (2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020. ▪ National Environment Protection Council (NEPC), 1999, National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013) (ASC NEPM). ▪ National Health and Medical Research Council (NHMRC) (2019), Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water, August 2019. ▪ USEPA (2006), Guidance for the Data Quality Objectives Process (EPA QA/G-4). A quality control program was implemented during the investigation and the quality assurance procedures used have been reiterated in the report.

QA/QC Aspects	Evidence and Evaluation
	The investigation was carried out in accordance with the Safe Work method Statements (SWMS) and Health, Safety and Environment Plan (HSEP) for the Site. Detailed work plans were also provided and are outlined in the SAQP. The Data Quality Objectives were expressed in terms of the purpose of the assessment and the relevant assessment criteria.
Data Validation Report	This review constitutes a data validation review. This was supported by an Esdat generated "QAQC Checker" excel report, summarised in Tables B4 and B5, Appendix B.
Data Representativeness	
Holding Times	Groundwater and surface water sample analysis holding times were in conformance with EPA Publication IWRG701 2009 *'Sampling and Analysis of Waters, Wastewaters, Soils and Wastes*.
Background Samples	No background samples were collected as part of this assessment.
Equipment Decontamination	The decontamination methodology conducted during this investigation is documented in the body of the report, and was in general conformance with the SAQP and work plans. ▪ Reusable sampling equipment was rinsed with Liquinox® and deionised water prior to the collection of each sample.
Data Precision and Accuracy	
QC Testing – Blind Replicates (Primary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 33 ▪ Blind Replicate Samples Analysed: 4 ▪ Blind Replicate Analyte Pairs: 112 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 5 ▪ Percentage of Analyte Pairs Exceeding Criteria: 4.5% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate sample pairs were all within one order of magnitude. The majority of PFAS RPD exceedances are attributed to low concentrations of analyte pairs, where small differences can result in disproportionately large RPDs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B4a, Appendix B. ***Surface water*** ▪ Acceptance Criteria: RPD < 30% ▪ Surface water Samples Analysed: 49 ▪ Blind Replicate Samples Analysed: 5 ▪ Blind Replicate Analyte Pairs: 140 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 2 ▪ Percentage of Analyte Pairs Exceeding Criteria: 1.4% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate sample pairs were all within one order of magnitude. The majority of PFAS RPD exceedances are attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B4a, Appendix B. ***Sediment*** ▪ Acceptance Criteria: RPD < 30% ▪ Sediment Samples Analysed: 12 ▪ Blind Replicate Samples Analysed: 2 ▪ Blind Replicate Analyte Pairs: 56 (excludes 'analytes' that are a summation of other analytes)

QA/QC Aspects	Evidence and Evaluation
	▪ Number of Analyte Pairs Exceeding Criteria: 1 ▪ Percentage of Analyte Pairs Exceeding Criteria: 1.8% RPD exceedances were associated with PFAS compounds. Analyte concentrations from the primary sample and their corresponding blind replicate sample pairs were all within one order of magnitude. The PFAS RPD exceedance is attributed to low concentrations of analyte pairs. This is not considered to impact the results of the investigation. The RPD results are presented in Table B4b, Appendix B.
QC Testing – Field Splits (Secondary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 33 ▪ Blind Replicate Samples Analysed: 4 ▪ Blind Replicate Analyte Pairs: 112 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 3 ▪ Percentage of Analyte Pairs Exceeding Criteria: 2.7% RPD exceedances were associated with PFAS compounds. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. The RPD results are presented in Table B4a, Appendix B. ***Surface water*** ▪ Acceptance Criteria: RPD < 30% ▪ Surface water Samples Analysed: 49 ▪ Blind Replicate Samples Analysed: 5 ▪ Blind Replicate Analyte Pairs: 140 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 3 ▪ Percentage of Analyte Pairs Exceeding Criteria: 2.1% RPD exceedances were associated with PFAS compounds. The majority of PFAS RPD exceedances are likely attributed to low concentrations of analyte pairs. A number of RPD exceedances may also be attributed to interlaboratory differences, which can be common and significant, based on a study done by the Queensland Department of Environment and Science and the Victorian Environment Protection Authority (Vardy et al, 2018). Overall, these RPD exceedances are not considered to impact the results of the investigation. The RPD results are presented in Table B4a, Appendix B. ***Sediment*** ▪ Acceptance Criteria: RPD < 30% ▪ Sediment Samples Analysed: 12 ▪ Blind Replicate Samples Analysed: 2 ▪ Blind Replicate Analyte Pairs: 56 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 0 ▪ Percentage of Analyte Pairs Exceeding Criteria: 0% There were no RPD exceedances observed for PFAS compounds. The RPD results are presented in Table B4b, Appendix B.
Trip Blanks	Five (5) trip blanks were collected, and laboratory tested for PFAS. All analytes were reported below the limit of reporting (LOR). Trip blank results are presented in Table B4, Appendix B.
Laboratory Internal QC	Evidence of the laboratories internal QC testing is present and complete. Both ALS (the primary laboratory) and Eurofins-mgt performed internal QC with

QA/QC Aspects	Evidence and Evaluation
	adequate testing and mostly satisfactory results for matrix spikes, method blanks and laboratory duplicates. Exceptions include: **Report EM2308003** ▪ Laboratory Duplicates and Matrix Spikes: Less than the specification outlined in NEPM 2013 B3 and ALS QC Standard **Report EM2308004** ▪ Matrix Spike: did not determine a matrix spike recovery as the background level was in excess of spike level for select PFAS compounds, or recovery less than lower data quality objective for select PFAS compounds. ▪ Laboratory Duplicates and Matrix Spikes: Less than the specification outlined in NEPM 2013 B3 and ALS QC Standard ▪ **Report EM2308009** ▪ Matrix Spike: determined a matrix spike recovery less than lower data quality objective for select PFAS compounds. **Report EM23080015** ▪ Matrix Spike: did not determine a matrix spike recovery as the background level was in excess of spike level for select PFAS compounds, or recovery less than lower data quality objective for select PFAS compounds. ▪ Laboratory Duplicates: Less than the specification outlined in NEPM 2013 B3 and ALS QC Standard These exceptions are not considered to impact the results of the investigation.
Laboratory Method Detection Limit	Laboratory reports indicate the method detection limits were lower than the respective assessment criteria.
NATA endorsement of laboratory reports	Laboratory reports were stamped with the NATA endorsement stamp and signature. Laboratory reports are included in Appendix C of this report.
Calibration of Field Equipment	All field equipment used was calibrated by the equipment supplier. Certificates and daily bump test records are included in Appendix D of this report.
Decontamination and Equipment Blanks	Nine (9) rinsate blanks were collected during the investigation. Six rinsate blank samples were tested for PFAS which all reported a concentration below the laboratory LOR, whilst three were placed on hold. Results are shown in Table B5, Appendix B.
Data Comparability	
Full Review of Data	Once all results have been received, Cardno undertook a full review of the data for any anomalies in consideration of historical data at each location (where available), such as first-time detections or exceedances being reported at locations which have not had detections or exceedances previously. Where potentially anomalous data is identified or suspected, further confirmatory measures were undertaken such as re-extraction and reanalysis of the sample by the laboratory and/or additional data quality review. The following samples were reanalysed: MW307, MW312, QC105, SW332, SW336 and SW387. All original results were confirmed.
Standard Procedures	Fieldwork procedures are detailed in the report and followed the work methods outlined in the SAQP.
Qualified Personnel	Staff involved in managing and reviewing the project and those involved in fieldwork are qualified personnel.
Sample Integrity	Field Chain of Custody forms are included in Appendix C of this report and demonstrate sample integrity.
Data Completeness	
Completeness of Test Program	The scope of work undertaken was generally consistent with that set out in the SAQP. Variations to the SAQP are detailed in the Factual Report.

QA/QC Aspects	Evidence and Evaluation
Validity of Data Set	The data quality review indicates no significant systematic errors in the data collection process for surface water and groundwater and therefore, the data set used as the basis for the assessment is considered valid and complete.

APPENDIX

F

INFORMATION ABOUT ENVIRONMENTAL REPORTS

About Site Environmental Assessment Reports

1. Introduction

This document explains the Environmental Site Assessment (ESA) process and the context that applies to the use of Environmental Reports issued by Cardno.

2. What is an ESA?

Environmental Site Assessments (ESA) are undertaken for a range of purposes, specific to the brief issued by the client in each case. The scope may include one or a combination of any of the following:

- A factual report of the condition of a portion of the site or one aspect of an entire site.
- Assessment of the contamination levels in soil to be removed from a site – a waste classification assessment.
- Validation of the success of remediation of a site or a portion of a site.
- Provision of a professional opinion about the suitability of a site for one or more uses, in terms of its contamination status.

The scope of any ESA needs to be defined at the outset.

An ESA is not an Environmental Audit. Such audits are undertaken in accordance with the provisions of regulations enacted in various states of Australia, and are referred to as Site Audits in some jurisdictions. Statutory audits provide certification by EPA accredited auditors that a site is suitable for one or more uses. An ESA may provide similar advice but cannot be used in place of an audit if the latter is required by regulation in any instance. However in some circumstances and jurisdictions an ESA is sufficient to provide "environmental sign-off" of a site.

An ESA may be undertaken for due diligence purposes, to establish whether the site has been impacted to the extent that some beneficial uses of the site may be precluded. Due diligence audits in many cases may be completed as non-statutory Audits, although in some jurisdictions they can also be statutory audits, if defined as such at the outset.

3. The ESA Process

The Client generally initiates the ESA process by specifying a brief which identifies the specific objectives of the assessment. If not, it is the consultants' duty to so specify the ESA

In the case of an ESA to provide an opinion about the suitability of the site for use, it would be conducted in accordance with NEPM (Site Assessment). Such ESA would not commence until a thorough site history assessment (Phase 1 Assessment: to identify the potential for significant contamination at a site) is conducted. However, where the history is unclear, a broad screening of chemical parameters can be used to test environmental media. This normally includes a broad range of organic and inorganic compounds and elements, often referred to as an Environmental Screen.

(In the case of an ESA for a purpose other than to provide an opinion about the suitability of the site for use, it is not always necessary to undertake a Phase 1 assessment.)

The ESA requires sampling of soil at representative locations across the site. A NATA accredited laboratory performs the analysis of soil. It is impractical for all of the soil to be assessed. The ESA is often based on a statistical method of grid or random sampling, augmented by targeted sampling at locations known or suspected to be contaminated. Guidance on sampling strategy and density is provided in Australian Standard AS4482.1–2005. However, some considerable degree of judgement is still required in the application of any sampling and testing strategy. For example the blanket application of the "hot spot" method presented in this standard is often inappropriate given its limitations.

The field program also investigates the likelihood of contamination below the site surface. Field investigations must sample and test fill as well as the natural soils. If contamination is found then it is common for further work to be undertaken to characterise, to the extent practical, its vertical and horizontal extent. However, where fill is encountered and testing shows it to be uncontaminated, it must be realised that the heterogeneous nature of the material might mean that not all pockets of contaminated material can be detected using normal sampling regimes.

EPA guidelines for auditors, that may be relevant for an ESA, indicate the need in all cases to consider the potential for groundwater contamination in any site. This does not mean all sites need to be drilled to sample groundwater, but it is most often the case. Most hydrogeological settings and groundwater conditions are complex and vary in space and time. The condition of groundwater is investigated to identify if any beneficial use or environmental value of groundwater is precluded due to contamination.

As previously stated for soil, all groundwater at the site cannot be tested. The environmental investigations are conducted in accordance with industry standards and guidelines (e.g. EPA Vic Pub 668). This provides a level of confidence that a sufficiently comprehensive assessment of the groundwater at the site is achieved.

Where an investigation shows that groundwater is polluted, consideration should be given to assessing the risks and the need for and practicality of any clean up.

4. Environmental Assessment Report

The ESA Report details the findings of the ESA. It provides summary information on the site definition, the reasons for the assessment and other relevant facts. It reviews the scope and quality of the site investigations, laboratory testing and data analyses undertaken. These reports also present a review of the contamination status of the site, the need for any further clean up, and an opinion on the suitability of the site for a range of beneficial uses and land uses such as “residential – low density”, “commercial” etc, as appropriate.

However, as noted above, some ESA have a narrow scope such as for classification of waste soil for removal from site, and do not make conclusions on suitability of site for use.

The ESA Report generally includes copies of other documents and reports, necessary to support the assessment findings, presented as appendices. These can contain more detailed information than the body of the ESA Report. Care should be taken to also read the appended documents and the ESA report in full.

Cardno generally issues reports in electronic form (e-Report) on CD ROM. ESA Reports are issued in this format as Adobe Acrobat™ PDF files. However, a paper copy of the executive summary of the ESA Report is generally issued to the client, and others as required by the brief or by regulation.

5. Limitations of Environmental Assessment Report

The ESA Report is prepared in a manner that can be easily read by a lay person with a legitimate interest in the contamination status of the site, such as the site owner or occupier, EPA and Local Planning Authority. The ESA report is not intended for use by other parties or for other purposes. Anyone who uses the assessment report for purposes other than specified in the report, does so at their own risk.

The site should only be used for one or more of the beneficial uses and land uses identified in the ESA as suitable.

The conditions and qualifications may apply to the suitability of the site for use, and it is the responsibility of the Client to be cognizant of and accept these in accepting the report. Cardno are only responsible for the issuing of the ESA report but accepts no liability for the costs incurred in the implementation of ESA findings.

The ESA provides a “snapshot” of the site conditions at the time of the site investigation. Consequently, the report may not be valid at a later time if there has been any change to the contamination status of the site in that time. Verification of the status of the site may be required in cases where a significant time has elapsed, or site conditions have changed since the assessment and audit.

The ESA is necessarily limited by constraints such as time, cost and available information; although normal professional practice at the time has been applied with all due care to prepare the report. A necessary requirement of this process is the horizontal and vertical interpolation of data from discrete locations. However, site conditions are generally not homogenous and some discrepancies will occur between the actual and predicted results at locations not directly sampled. There is a risk that contamination may occur at the site and not be identified by a competent investigation and assessment. The approach adopted in sampling (a combination of statistically based grid and judgmental sampling) seeks to reduce, but cannot eliminate, this risk.

Where unexpected occurrences of contamination arise, subsequent to the issue of the ESA Report, Cardno should be permitted to make an interpretation of these facts in relation to the ESA Report findings. Consequently, the Client should inform Cardno and seek their opinion. Cardno accepts no liability for costs incurred due to such

unexpected occurrences, given the inherent uncertainties in the assessment process.

Cardno uses information provided by other parties as the basis for the ESA, and reliance on this information is at the discretion of Cardno. However, however Cardno cannot guarantee any of the facts, findings or conclusions presented by other parties. Cardno will not be liable for the use of information, provided by others that is subsequently found to be intentionally misleading.

The ESA Report is not and does not purport to be anything other than a contaminated land ESA. It is not a geotechnical report and bore logs reproduced are for interpretation of the likely distribution of contamination. They are not intended for geotechnical interpretations and may not be adequate for this purpose.

The ESA Report is not intended to be a comprehensive analysis of the presence and associated risk of asbestos in buildings and services. Where asbestos in buildings and services is known or likely, the report may only caution that an appropriately qualified person be engaged to undertake demolition to avoid contamination of the site.

Cardno

13 August 2015

Appendix G OMP Factual Sampling Report – October 2023

©JBS&G Australia Pty Ltd

PFAS OMP Factual Report

Biannual Sampling Event October 2023

Bandiana Military Area

DEF19008



Prepared for

Department of Defence

8 March 2024

Cardno®

Contact Information

Cardno Victoria Pty Ltd
ABN 47 106 610 913

Level 4, 501 Swanston Street,
Melbourne Vic 3000
Australia

www.cardno.com
Phone +61 3 8415 7777
Fax +61 3 8415 7788

Document Information

Prepared for	Department of Defence
Project Name	PFAS OMP Factual Report
File Reference	OMP002_Bandiana_E5 FactualReport_RevC.docx
Job Reference	DEF19008
Date	8 March 2024
Version Number	C
Effective Date	08/03/2024

Author(s):

Approved By:

[redacted]

[redacted]

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Table of Contents

1	Introduction		1
	1.1	Background	1
	1.2	Purpose & Objectives	1
	1.3	Relevant Guidelines	1
2	Scope of Work		2
	2.1	Review / Revision of the SAQP	2
	2.2	Groundwater Monitoring	2
	2.3	Surface Water Monitoring	3
	2.4	Data Management	3
	2.5	Deviations from the OMP SAQP	3
3	Methodology		7
	3.1	Groundwater Sampling Methodology	7
	3.2	Surface Water Sampling Methodology	8
	3.3	Quality Control / Quality Assurance	9
	3.4	Assessment Criteria	9
4	Field Observations and Results		11
	4.1	Conditions Impacting the Sampling Event	11
	4.2	Groundwater	11
	4.3	Surface water	13
	4.4	Data Validation	14
5	Summary and Conclusions		15
6	References		16

Appendices

Appendix A Figures
Appendix B Data Assessment Tables
Appendix C Laboratory Certificates
Appendix D Field Records & Calibration Certificates
Appendix E Data Quality Review
Appendix F Information about Environmental Reports

Tables

Table 2-1	Groundwater Monitoring Locations	2
Table 2-2	Surface Water Monitoring Locations	3
Table 2-3	Deviations from the SAQP	3
Table 3-1	Groundwater Sampling Method	7

Table 3-2 Surface Water Sampling Method 8
Table 3-3 Criteria for Groundwater and Surface Water 9
Table 4-1 Rainfall prior to and during the event 11
Table 4-2 Summary of Groundwater Results Exceeding Adopted Criteria 12
Table 4-3 Summary of Groundwater Results with First-time Detections or New Exceedances of Adopted Criteria 13
Table 4-4 Summary of Surface Water Results Exceeding Adopted Criteria 14
Table 5-1 Summary of Results 15

List of Abbreviations and Units

Chemical Names

DOC	Dissolved Organic Carbon
DO	Dissolved Oxygen
PFAS	Per- and Poly-fluoroalkyl Substances
PFHxS	Perfluorohexanesulfonate
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
TDS	Total Dissolved Solids (salinity of water)
TSS	Total Suspended Solids

Technical Terms

AFFF	Aqueous Film-Forming Foam
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australia and New Zealand Guidelines
AS	Australian Standard
ASC	Assessment of Site Contamination
AST	Above-ground Storage Tank
BGL	Below Ground Level
CoC	Chain of Custody
CSM	Conceptual Site Model
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
HEPA	Heads of Environmental Protection Authority
HHERA	Human Health and Ecological Risk Assessment
HIL	Health Investigation Level
HSL	Health Screening Level
IP	Interface Probe
LOR	Limit of Reporting
N/A	Not Applicable
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environmental Protection Measure
NHMRC	National Health and Medical Research Council
QA	Quality Assurance
QC	Quality Control

RPD	Relative Percentage Difference
SAQP	Sampling and Analysis Quality Plan
SWL	Standing Water Level

Units

ha	Hectares
mBGL	Metres Below Ground Level
mbTOC	Metres below Top of Casing
mg/kg	Milligram per Kilogram (approximately equivalent to ppm)
mg/L	Milligram per Litre
mV	Millivolt
ORP	Oxidation-Reduction Potential
ppm	Parts per Million
µg/L	Micrograms per Litre
µS/cm	Micro Siemens per Centimetre (Electrical Conductivity - Water)

Site Specific

OMP	Ongoing Monitoring Plan
DCMM	Defence Contamination Management Manual
ESdat	Environmental data management software
BMA	Bandiana Military Area
MA	Management Area

1 Introduction

1.1 Background

Cardno was engaged by the Department of Defence ("Defence" or "the Client") to carry out the Per- and Poly-fluoroalkyl Substances (PFAS) Ongoing Monitoring Plan (OMP) at Bandiana Military Area ("the Site"). The Bandiana Military Area (BMA) is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

The OMP was carried out in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP):

> Cardno, 13 October 2023 Reference: DEF19008_OMP002, '*PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area'*, Rev 1.5.

For the purposes of this report:

> The "On-Site Monitoring Area" (the 'Site') is defined as BMA and is comprised of three individual properties identified as North Bandiana (Gaza Ridge Barracks), South Bandiana (Gaza Ridge Barracks) and East Bandiana (Wadsworth Barracks).

> The "Off-Site Monitoring Area" is defined as comprising Jack in the Box Creek to the north west of South Bandiana to its confluence with Wodonga Creek, an unnamed creek to the east of North Bandiana to its confluence with the Kiewa River, and the Kiewa River and western Kiewa River floodplain from Middle Creek in the south to north of the unnamed creek.

> The "Management Area" (MA) is defined as comprising the On-Site Monitoring Area and the Off-Site Monitoring Area.

The location of the Site (BMA), MA, the On-Site Monitoring Area and the Off-Site Monitoring Area are displayed in Figure 1 of Appendix A.

1.2 Purpose & Objectives

The objective of the OMP is to assess the changes in the nature and extent of PFAS within the environment, specifically where there is an identified potentially elevated risk to a receptor or a potential future risk to a receptor associated with Defence's historical use of Aqueous Film-Forming Foam (AFFF).

The purpose of this PFAS OMP factual report is to provide an up-to-date status of the condition of the Site as it is currently understood in relation to the most recent sampling event.

The objectives of the report are:

> To provide a succinct summary of the October 2023 sampling event and provision of analytical results with supporting tables and figures.

> To provide confirmation of the current understanding of risk.

> To provide supporting data for the assessment of management actions, where relevant.

1.3 Relevant Guidelines

This assessment has been undertaken in general accordance with applicable industry standards for a site investigation for the purpose, objectives and scope identified in this report. These standards are set out in:

> Australian and New Zealand Guidelines, 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

> Australian Standard AS 4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds*[1].

[1] AS 4482.1-2005 is currently 'Withdrawn', but the assessment will consider it still to be suitable as a state of knowledge document until superseded.

> Department of Defence, Department of Energy, 2018, *Quality System Manual Schedule B15*.

> Heads of Environment Protection Authority Australia and New Zealand (HEPA), 2020, *PFAS National Environmental Management Plan (NEMP),* Version 2.0, January 2020.

> National Environment Protection Council (NEPC), 1999, *National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013)* (ASC NEPM).

> National Health and Medical Research Council (NHMRC), 2019, *Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water*.

> Standards Australia, 1998, AS/NZ 5667:1998 *Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*.

> U.S. Environmental Protection Agency (EPA), 2006, '*Guidance for the Data Quality Objectives Process (EPA QA/G-4)*'.

> USEPA, 2002, '*Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8)'.*

2 Scope of Work

Cardno carried out the following tasks in order to satisfy the purpose and objectives of this assessment.

2.1 Review / Revision of the SAQP

Cardno undertook a review of the SAQP (Rev5 Cardno, 2023) prior to commencement of sampling and completed updates to add the newly installed monitoring well MW416 to the annual sampling scope (replacement for MW326), and updated the SAQP to be in line with the *PFAS Ongoing Monitoring Program Sampling, Analysis and Quality Plan Guidance* (Cardno, 2023) document. The SAQP (Cardno, 2023) will be reviewed and revised (as required) prior to the next monitoring event scheduled for May 2024.

2.2 Groundwater Monitoring

Sampling of groundwater monitoring wells was performed in general accordance with the SAQP, applying methods set out in Section 3.1 of this report. The groundwater monitoring wells scheduled for sampling as part of the OMP October 2023 annual sampling event are presented in Table 2-1, and are shown in Figure 3, Appendix A.

Table 2-1 Groundwater Monitoring Locations

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Number of Monitoring Locations	Monitoring Well / Bore ID
Jack in the Box Creek	Annual (August to October)	On-Site	10	MW051, MW311, MW315, MW317, MW318, MW319, MW321, MW323, MW329 and MW416.
		Off-Site	1	MW313.
	Biannual	On-Site	3	MW304, MW307 and MW312.
		Off-Site	2	MW360 and MW361.
Kiewa River	Annual (August to October)	On-Site	1	MW056.
	Biannual	On-Site	24	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_I, MW046_D, MW052, MW342, MW345, MW346, MW350_S, MW350_D,

				MW351, MW352, MW353, MW354, MW403 and MW404.
		Off-Site	3	MW356, MW357, OTH019.

2.3 Surface Water Monitoring

Sampling of surface water locations was performed in general accordance with the SAQP, applying methods set out in Section 3.2 of this report. The surface water sampling locations monitored as part of the OMP October 2023 biannual sampling event are presented in Table 2-2, and are shown in Figure 4, Appendix A.

Table 2-2 Surface Water Monitoring Locations

Catchment	Sampling Frequency	Location (On-Site/ Off-Site)	Number of Monitoring Locations	Monitoring Location ID
Jack in the Box Creek	Biannual	On-Site	16	SW302, SW307, SW310, SW311, SW313, SW316, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, and SW448.
		Off-Site	7	SW424, SW427, SW430, SW431, SW432, SW434 and SW463.
Kiewa River	Biannual	On-Site	12	SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW379, SW380, SW382, SW387 and SW388.
		Off-Site	18	SW390, SW393, SW395, SW396, SW397, SW398, SW400, SW401, SW403, SW404, SW405, SW409, SW412, SW416, SW462, SW470, SW471 and SW487.

2.4 Data Management

All the data included in the report have been collected, uploaded to the ESdat database and reviewed according to the data management requirements of the Defence Contamination Management Manual (DCMM) Annex L (Defence, 2021b).

2.5 Deviations from the OMP SAQP

Deviations from the SAQP were attributed to a lack of sampling media and the resampling event as summarised in Table 2-3. On-Site and Off-Site sampling and testing was planned at 44 groundwater locations and 53 surface water locations but was only completed at 40 groundwater locations and 44 surface water locations. Resampling of select locations due to unexpected results occurred as a second event in November 2023. Further details are provided in Table 2-3.

Table 2-3 Deviations from the SAQP

Location	Deviation	Comment/Justification	Impact on Existing Dataset
Groundwater			
MW051	Resampled during resampling event	Resampled due to new exceedance	Location reported a new exceedance of drinking water criteria of PFOS+PFHxS. Location is downgradient from MW321 where elevated concentrations were also reported. Resampling in November 2023 was undertaken to confirm October 2023 results.
MW052	Resampled during resampling event	Resampled due to unexpected results	Location reported an increase of PFOS+PFHxS results from 19.5 µg/L in May 2023 to 174 µg/L in October 2023. Resampling in November 2023 was undertaken to confirm October 2023 results.
	Purging and resampling of well during resampling event	Unexpected results	After initial resampling in November 2023, the well was purged via bailing 3 bore volumes (30 L removed) and resampled for the second time after 24 hours.
MW056	Not Sampled	Wrong location (BH157) was mistakenly sampled instead of MW056	Nested well screened in the regional aquifer was mistakenly sampled instead of MW056 targeting the perched water. The two wells are located adjacent to each other, were of similar appearance, and the label on the gatics appeared to have worn out. This is considered to be a potential data gap as it is the only well targeting the perched groundwater in Source Area 9 and is sampled on an annual basis. However, this is considered to have a minor impact on the dataset as concentrations have previously been stable and below recreational guidance values. It is proposed to sample this location in the bi-annual April 2024 event to address the data gap. Results from BH157 are not included in this report as it is not part of the OMP.
MW315	Not Sampled	Location dry	Location was dry, no water evident with interface probe (IP). Confirmed with bailer. This is considered to be a potential data gap as all three wells targeting Source Area 2 (MW315, MW317 and MW318) were dry this event. However, downgradient on and off-site locations screened within the same aquifer were sampled during this event, allowing any migration of impacts to be monitored. Location last sampled in the November 2021 sampling event where results were reported below the laboratory limit of reporting (LOR) for PFOS+PFHxS and PFOA. Location was also sampled during the Detailed Site Investigation (Golder, 2018).
MW317	Not Sampled	Location dry	Location was dry, no water evident with IP. Confirmed with bailer. This is considered to be a potential data gap as all three wells targeting Source Area 2 (MW315, MW317 and MW318) were dry this event. However, downgradient on and off-site locations screened within the same aquifer were sampled during this event, allowing any migration of impacts to be monitored. The well has been dry historically throughout the OMP, location was last sampling during the DSI (Golder, 2018) where concentrations were reported above the LOR for PFOS+PFHxS but below health based guidance values.
MW318	Not Sampled	Location dry	Location was dry, no water evident with IP. Confirmed with bailer. This is a potential data gap as the location has not been sampled previously as it has always been found to be dry (during DSI and OMP). However, this is not considered to have a significant impact on the dataset as the downgradient locations were sampled during this event and previous events.

MW321	Resampled during resampling event	Resampled due to unexpected results	Location reported an increase of PFOS+PFHxS results from 0.75 µg/L in October 2022 to 1,180 µg/L in October 2023. Resampling in November 2023 was undertaken to confirm October 2023 results.
	Purging and resampling of well during resampling event	Unexpected results	After resampling in November 2023, the well was purged via bailing dry (30 L removed) and resampled for the second time after 24 hours.
MW359	Sampled during resampling event	Non-OMP well sampled during resampling event	DSI well MW359 was sampled during November resampling to provide additional delineation data upgradient of MW321.
Surface Water			
SW302	Not Sampled	Location dry	Location was dry. This is a potential data gap as the location has not been sampled previously as it has always been found to be dry (during DSI and OMP). However, this is not considered to have a significant impact on the dataset as the downstream locations were sampled during this event and previous events.
SW307	Not Sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as downstream On-site locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for PFOS+PFHxS. Location was also sampled in November 2021 (first OMP event).
SW310	Not Sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as downstream On-site and off-site locations were sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for PFOS+PFHxS. Location was also sampled in three of the four previous OMP events.
SW311	Not Sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as downstream off-site locations were sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for PFOS+PFHxS. Location was also sampled in three of the four previous OMP events.
SW316	Not Sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as downstream off-site locations were sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the LOR for PFOS+PFHxS, above the adopted drinking water criteria and below recreational water criteria for PFOS+PFHxS. Location was also sampled in three of the four previous OMP events and during the DSI.
SW332	Sampled during resampling event	Location dry during initial OMP event	Location was found to be dry during the October 2023 sampling event. During the resampling event in November 2023, SW332 was observed to contain water and was sampled.

SW333	Sampled during resampling event	Location dry during initial OMP event	Location was found to be dry during the October 2023 sampling event. During the resampling event in November 2023, SW333 was observed to contain water and was sampled.
SW379	Not Sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as one downstream on-site location was sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for PFOS+PFHxS. Location was also sampled in November 2021 (first OMP event).
SW380	Not Sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as one downstream On-site location was sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for PFOS+PFHxS. Location was also sampled in three of the four previous OMP events and during the DSI.
SW388	Not Sampled	Location dry	Location was dry. This is considered to have a very minor impact on the dataset as the downstream off-site locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for PFOS+PFHxS. Location was also sampled in all other previous OMP events and during the DSI.
SW448	Not Sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as the downstream On-site locations were sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the LOR for PFOS+PFHxS and PFOA and above the adopted drinking water criteria and recreational water criteria for PFOS+PFHxS. Location was also sampled in three of the four previous OMP events and during the DSI.

3 Methodology

3.1 Groundwater Sampling Methodology

Groundwater monitoring was undertaken as detailed in Table 3-1.

Table 3-1 Groundwater Sampling Method

Activity	Details
Dates of Field Activity	23 to 27 October 2023 and 27 to 28 November 2023[1]
Well Gauging	Standing Water Levels (SWL) were gauged using an IP. All wells were measured against a specified mark at the top of the well casing.
Groundwater Water Quality Parameters	Groundwater water quality parameter field measurements (water quality parameters s) were recorded with a water quality meter after sample collection using extra sample water from within the HydraSleeve® decanted into a clean jar. The following water quality parameters were recorded using a water quality meter: ▪ pH. ▪ Electrical conductivity (EC). ▪ Oxidation-Reduction potential (ORP). ▪ Dissolved oxygen (DO). ▪ Temperature. Water quality parameters measured by the water quality meter were recorded on field data records. All field instruments (e.g., water quality meter) were calibrated by the equipment supplier and/or trained Cardno staff to optimize the accuracy of the measurements taken. Bump tests were also completed daily by field staff during the monitoring event. Calibration certificates and bump test records are provided in Appendix D.
Deployment of HydraSleeve®	The HydraSleeves® were deployed with attached weights in order for sample collection to begin at the lowest point of the well screen. All existing HydraSleeves® which had not been redeployed during the May 2023 event were replaced during the initial gauging round on 24 October 2023. HydraSleeves® were left in wells for a minimum of 4 hours when deployed with bottom weights only, to allow restabilisation of the well following the slight disturbance caused by sampler deployment, before sampling. For wells with a shallow water column, HydraSleeve® sampling devices were deployed with both top and bottom weights and were left in the well for a minimum of 24 hours, to allow the top weight time to compress the HydraSleeve® into the bottom of the well.
Retrieval of HydraSleeve® (Sample Collection)	Samples were collected via the continuous pull method at a rate of approximately 30 cm per second, allowing the water to pass through the check valve into the sample sleeve. Samples were discharged immediately (to minimise changes in chemistry) via discharge tube.
Sample collection by bailer or tap	As per the SAQP, where insufficient water was retrieved with the HydraSleeve®, samples were collected by bailer. For bailer sampling, wells were purged until water quality parameters were stabilised or until dry, whichever is sooner, prior to sample collection. Where sampling of a well was required from a tap due to access constraints, the well was purged by running water from the tap for one minute prior to sample collection directly into laboratory supplied sample containers.
Decontamination procedure	New HydraSleeves® were used at each groundwater monitoring well, thus removing the need for decontamination. Where HydraSleeves® could not be used, single use bailers were used instead which also did not require decontamination. All re-usable sampling/down-hole equipment (e.g., IP) was thoroughly washed using PFAS & phosphate-free detergent, then double rinsed with clean water before the sample collection.

Activity	Details
Sample identification, preservation transport and holding times	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM (Defence, 2021b). Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under Chain of Custody (CoC) documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All groundwater samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are National Association of Testing Authorities (NATA)-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and CoC documentation are included in Appendix C.
Laboratory Testing – Quality Control	Groundwater quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 water samples (five samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 water samples (five samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling/down-hole equipment] (seven samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (five samples total).
[1]Re-sampling event to confirm unexpected results from October 2023 sampling.	

3.2 Surface Water Sampling Methodology

Surface water monitoring was undertaken using a grab method as detailed in Table 3-2.

Table 3-2 Surface Water Sampling Method

Item	Details
Dates of Field Activity	23 to 27 October 2023 and 28 November 2023[1]
Surface Water Parameters	Surface water physio-chemical parameters (i.e., pH, EC, ORP, DO, and temperature) were recorded at the time of sampling using a pre-calibrated water quality meter. Field observations such as water body type, channel width, flow, turbidity, and the presence of odours, sheen, nuisance organisms, floating debris and frothing (where observed) were also recorded on field sampling sheets.
Sampling Method	Where possible, the samples were collected directly into sample containers. Where depth permits, sample bottles were positioned at least 10 cm below the surface water level and above the sediment bed and orientated with the opening facing downwards to avoid the collection of surface films. Where access to surface water samples was difficult, the samples were collected using a long-handled sampling device with a plastic container (scoop) that was lowered directly into the water body. Samples were then decanted into the laboratory-supplied sample containers. Samples were collected in accordance with Australian/New Zealand Standards (AS/NZS 5667.1:1998) '*Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples'*.
Decontamination	All re-usable sampling equipment (telescopic pole) were thoroughly washed using phosphate-free detergent (Liquinox), and subsequently double rinsed with clean water before the sample collection.

Item	Details
Sample identification, preservation, transport and holding times.	Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample labelling and naming was in accordance with Annex L of the DCMM (Defence, 2021b). Samples were contained in appropriately preserved laboratory supplied bottles (Teflon-free) and packed in chilled containers for delivery to the laboratory under CoC documentation. Sample containers, preservation procedures, sample storage requirements and holding times were undertaken in accordance with those recommended by Standards Australia (AS/NZS 5667.1:1998 and AS 4482.1 as appropriate).
Laboratory Testing	All surface water samples were analysed for the full PFAS analytical suite (see SAQP for full list of analytes). The primary laboratory was ALS Global Laboratories (Springvale), and the secondary laboratory (quality control) was Eurofins (Dandenong South). Both laboratories are NATA-accredited for the parameters tested. Copies of the NATA stamped laboratory reports and CoC documentation are included in Appendix C.
Laboratory Testing – Quality Control	Surface water quality control samples were collected as follows and analysed for the full PFAS analytical suite: ▪ Field duplicate (intra-laboratory) samples at one per 10 water samples (six samples). ▪ Field triplicate (inter-laboratory) samples at one per 10 water samples (six samples). ▪ Rinsate blank samples at one per day [collected off re-used sampling equipment] (seven samples total). ▪ Trip blank samples of one per shipment included in the chilled sample containers upon transport to the laboratory (five samples total).
[1]Re-sampling event of previously dry locations from October 2023.	

3.3 Quality Control (QA) / Quality Assurance (QC)

A critical aspect of site assessments is the demonstration of the quality of the data used as the basis for the assessment. This is achieved through a Data Validation process which includes a review of the following data quality indicators, as described in the SAQP:

- QA documentation.
- Bias.
- Data Representativeness.
- Data Precision & Accuracy.
- Data Comparability.
- Data Set Completeness.

A detailed review of these aspects has been undertaken, the results of which are presented in Appendix E. A summary of the data validation from the QA/QC review is included in Section 4.4 below.

3.4 Assessment Criteria

3.4.1 Groundwater and Surface Water

The adopted assessment criteria for groundwater and surface water are detailed in Table 3-3.

Table 3-3 Criteria for Groundwater and Surface Water

Exposure Scenario	Adopted Assessment Criteria		Guidance
	PFHxS / PFOS	PFOA	
	µg/L		
Human Health – Surface Water Recreational	2[2]	10	PFAS NEMP (HEPA, 2020)

Human Health – Drinking Water Quality Guideline[1]	0.07[2]	0.56	PFAS NEMP (HEPA, 2020)
Ecological (99% species protection – high conservation value systems)	0.00023[3]	19	PFAS NEMP (HEPA, 2020)
Ecological (95% species protection – slightly to moderately disturbed systems)	0.13[3]	220	PFAS NEMP (HEPA, 2020)

1. Drinking Water screening guidelines have been adopted for screening purposes for Industrial Water use, Stock Water use and Agriculture/Parks/Gardens Water use.
2. Combined PFOS and PFHxS.
3. PFOS only; For 99% species protection, the criterion of 0.00023 µg/L is lower than the laboratory LOR, however, the PFAS NEMP (HEPA, 2020) allows for the adoption of the laboratory LOR as a screening level rather than a quantified measurement.

4 Field Observations and Results

4.1 Conditions Impacting the Sampling Event

The total rainfall recorded prior to and during the sampling event at the nearest weather station (082056)[2] is detailed in Table 4-1. The monthly rainfall (8.6 mm) recorded in the month of September 2023, prior to the event, was significantly lower than the monthly average rainfall in September of 62.6 mm from 1899 to 2022. As a result, a number of surface water locations were unable to be sampled during the event.

Table 4-1 Rainfall prior to and during the event

Date	Total Rainfall (mm)
7 days prior to event (16 October to 22 October 2023)	0
Day 1 of event (23 October 2023)	0
Day 2 of event (24 October 2023)	0
Day 3 of event 25 October 2023)	0
Day 4 of event (26 October 2023)	0.2
Day 5 of event (27 October 2023)	0

No On-Site activities with potential to impact sample collection or results were noted.

4.2 Groundwater

4.2.1 Summary of Field Observations

4.2.1.1 Water quality parameter field measurements

Stabilised water quality parameters, water colour and turbidity observations recorded during the groundwater sampling program are presented in field sampling record sheets, included in Appendix D. Water quality parameters for all locations were generally consistent with previous events. Groundwater varied from clear to brown with low to high turbidity.

4.2.1.2 Groundwater Elevation and Migration

Groundwater elevation and flow direction across the three bases included in the PFAS OMP is summarised below:

- South Bandiana: Groundwater elevations observed at South Bandiana during the sampling event ranged from 160.374 m Australian Height Datum (AHD) at MW304 to 166.685 mAHD at MW329. Slight groundwater mounding was observed at MW329, which is consistent with previous sampling events. Groundwater flow is inferred to flow in a west to north-westerly direction toward the Jack in the Box Creek. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling events.
- North Bandiana: Groundwater elevations observed at North Bandiana during the sampling event ranged from 164.432 mAHD at MW345 to 167.461 mAHD at MW342. Groundwater flow is inferred to flow in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling events.
- East Bandiana: Groundwater elevations observed at East Bandiana during the sampling event ranged from 157.740 mAHD at MW020 to 160.917 mAHD at MW052. Groundwater flow is inferred to flow in an easterly direction toward the Kiewa River. Groundwater elevations and flow direction were generally consistent with those reported during the previous sampling events.

Groundwater elevation contours and flow directions for October 2023 are shown in Figure 2, Appendix A. Gauging data are presented in Appendix D.

[2] Climate statistics for Australian locations – summary statistics Wodonga Daily Rainfall - 082056 - Bureau of Meteorology (bom.gov.au), last accessed 18 December 2023.

4.2.2 Groundwater Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, and are presented in Table B1, Appendix B, and summarised in Table 4-2 below. Of the 40 primary samples that were tested, PFOA was reported above the LOR in 20 samples and PFOS+PFHxS and PFOS were both reported above the LOR in 35 samples.

Table 4-2 Summary of Groundwater Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW051 MW052, MW307, MW311, MW312, MW313, MW319, MW321, MW329, MW342, MW345, MW350_D, MW350_S, MW351, MW352, MW353, MW354, MW357, MW359[4], MW360, MW361, MW403, MW404, OTH019	0.00023[2]	983	35	35	MW304 (decrease) MW321 (increase)
PFOA	MW009, MW052, MW307, MW321, MW350_S, MW353, MW403, MW404	0.56[1]	42.2	20	8	MW321 (increase)
PFOS+ PFHxS	MW009, MW012, MW016, MW018, MW020, MW029, MW034, MW035, MW042, MW043, MW046_D, MW046_I, MW051 MW052, MW307 MW312, MW319, MW321, MW329, MW342, MW345, MW350_D, MW350_S, MW353, MW354, MW359[4], MW360, MW361, MW403, MW404, OTH019	0.07[1]	1,180	35	30	MW304 (decrease) MW321 (increase)

Note:
1. Drinking water assessment criteria.
2. Ecological assessment criteria.
3. Significant concentration change defined as an order of magnitude increase or decrease.
4. Non-OMP well MW359 was sampled additionally as part of the resampling event in November 2023.

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- MW304: PFOS+PFHxS has decreased by one order of magnitude from a previous result of 0.34 µg/L in May 2023 to <0.01 µg/L in this event. PFOS has also decreased by one order of magnitude from 0.30 µg/L to <0.01 µg/L.
- MW321: PFOS+PFHxS has increased by one order of magnitude from a previous result of 0.75 µg/L in October 2022 to 1,180 µg/L in this event. PFOA has also increased by one order of magnitude from <0.01 µg/L to 11.6 µg/L. PFOS has also increased by one order of magnitude from 0.58 µg/L to 983 µg/L.

Due to inconsistent results compared to the historical concentrations at MW321 and MW052, re-sampling of these locations was undertaken on 27 and 28 November 2023. Re-sampling result for MW321 confirmed results from the October 2023 event. Initial results for MW052 reported an order of magnitude increase of PFOS+PFHxS and PFOA. Re-sampling results for MW052 confirmed the result from October 2023 event are considered anomalous and the re-sampling result aligned with historical data. Therefore, the October 2023 results are not discussed in this factual report, but results are included in Table B1, Appendix B.

A summary of locations where a first-time detection, or a new exceedance of guideline values were reported is provided in Table 4-3 below. The laboratory reports are provided in Appendix C.

Where re-sampling was undertaken the highest reported value has been adopted for the purpose of this assessment.

Table 4-3 Summary of Groundwater Results with First-time Detections or New Exceedances of Adopted Criteria

Deviation Type	Monitoring Well	PFOS+PFHxS concentration (µg/L)		PFOA concentration (µg/L)		PFOS concentration (µg/L)	
		October/ November 2023	Previous Maximum	October/November 2023	Previous Maximum	October/November 2023	Previous Maximum
New exceedance	MW051	**0.16**[1]	0.02	0.01	<0.01	**0.08**	**0.02**
New exceedance	MW321	**1,180**	**7.65**	**11.6**	0.10	**983**	**6.01**
New exceedance	MW353	**18.8**	**10.1**	**0.67**	0.33	**4.60**	**3.85**
New Exceedance	MW359	**0.26**[2]	0.03	<0.01	<0.01	**0.11**	**0.03**

Note:
Location with first-time detection of PFOS+PFHxS, PFOA or PFOS in latest monitoring round
Location with a new exceedance of lowest adopted guideline values in latest monitoring round
Bold: Exceedance of lowest adopted guideline values
1. Re-sampling value adopted
2. Non-OMP well sampled as additional data point during re-sampling event

Findings are summarised as follows:

- Two groundwater sampling locations (MW321 and MW353) reported new exceedance of PFOA assessment criteria.
- Two groundwater sampling location (MW051 and MW359) reported a new exceedance of PFOS+PFHxS assessment criteria.
- One groundwater sampling location (MW051) reported a first-time detection of PFOA in November 2023.

4.2.3 Summary of Monitoring Network Condition and Repairs

The monitoring network was observed to be generally in good condition.

Minor damage was observed on the monument lids of MW307 and MW342. The stick up and well caps were observed to be in good condition and therefore the damage is not expected to have any impact on the wells.

A fallen tree was observed at MW319 but appeared to not have impacted the condition of the well.

No other changes to the monitoring network condition were noted.

4.3 Surface water

4.3.1 Summary of Field Observations

4.3.1.1 Water quality parameter field measurements

Stabilised water quality parameters, water colour and turbidity observations recorded during the surface water sampling program are presented in field sampling record sheets, included in Appendix D. Field observations indicated:

- Sampled locations generally had lower water levels and slower flow rates compared with the previous monitoring event in May 2023, due to the low rainfall that occurred preceding and during the event.
- SW336 and SW340 saw decrease in ORP and an increase in DO compared to previous historical results.
- SW424 observed a significant decrease in EC by one order of magnitude compared to the May 2023 results.

- DO concentrations across the Site were generally lower than previous historical events.
- Water quality parameters for all other locations were generally consistent with previous events.

4.3.2 Surface Water Laboratory Results

The results of laboratory analysis have been compared against adopted assessment criteria, presented in Table B2, Appendix B, and summarised in Table 4-4 below. Of the 44 primary samples that were tested, PFOA was reported above the LOR in 22 samples, and PFOS+PFHxS and PFOS were both reported above the LOR in 35 samples.

Table 4-4 Summary of Surface Water Results Exceeding Adopted Criteria

Analytes	Locations Exceeding Criteria	Lowest Criteria (µg/L)	Max Conc. (µg/L)	No. Analytical Results >LOR	No. Results Above Criteria	Significant Concentration Changes[3]
PFOS	SW313, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW387, SW395, SW396, SW397, SW400, SW401, SW403, SW405, SW409, SW412, SW424, SW427, SW430, SW431, SW432, SW462, SW463, SW470, SW471, SW487	0.00023[2]	13.8	35	35	SW387 (increase)
PFOA	SW336	0.56[1]	1.17	22	1	-
PFOS+ PFHxS	SW313, SW321, SW322, SW323, SW324, SW326, SW332, SW333, SW336, SW338, SW340, SW346, SW349, SW355, SW370, SW374, SW375, SW387, SW395, SW396, SW397, SW400, SW401, SW403, SW405, SW409, SW424, SW427, SW430, SW432, SW462, SW463, SW470, SW471, SW487	0.07[1]	15.9	35	33	SW387 (increase)

Note:
1. Drinking water assessment criteria.
2. Ecological assessment criteria.
3. Significant concentration change defined as an order of magnitude increase or decrease.

Results have also been compared to available historical data. The following locations have reported a significant change in concentration for this monitoring event:

- SW387: PFOS has increased by one order of magnitude from a previous result of <0.01 µg/L in May 2023 to 0.14 µg/L in this event. PFOS+PFHxS has also increased by one order of magnitude from a previous result of <0.01 µg/L in May 2023 to 0.29 µg/L in this event.

No first-time detections of PFOS, PFOS+PFHxS or PFOA or new exceedances of guideline values were reported. The laboratory reports are provided in Appendix C.

4.4 Data Validation

The data validation process has concluded that there are no significant systematic errors in the data collection process. Therefore, the data set used as the basis for the surface water, groundwater and sediment assessment are considered valid and complete. A detailed Data Quality Review is included in Appendix E.

5 Summary and Conclusions

Cardno conducted the October/November 2023 annual groundwater and surface water monitoring event at BMA as part of the PFAS OMP. On-Site and Off-Site sampling and testing was undertaken at 40 groundwater monitoring wells and 44 surface water locations.

Groundwater levels were gauged in all accessible wells before sampling. Groundwater flow was interpreted be generally consistent with May 2023 with flow in a west to north-westerly direction from South Bandiana towards Jack in the Box Creek, and flow in an easterly direction from North Bandiana and East Bandiana towards the Kiewa River.

Table 5-1 Summary of Results

Activity	Details
Deviations from OMP SAQP	> 9 surface water locations were not sampled due to locations being dry. > 3 groundwater locations were not sampled due to locations being dry. > 1 groundwater location was not sampled due to misidentification of the well.
Groundwater Analytical Results	> 40 groundwater samples were collected in total during the initial sampling event. > Six groundwater samples from four locations were collected in total during the resampling event. > 2 groundwater monitoring locations (MW321 and MW353) reported a new exceedance of PFOA. > 2 groundwater monitoring location (MW051 and MW359) reported a new exceedance of PFOS+PFHxS. > 1 groundwater monitoring location (MW051) reported a first-time detection for PFOA. > No locations reported a first-time detection for PFOS or PFOS+PFHxS. > No locations reported a new exceedance of the lowest adopted assessment criteria for PFOS. > 1 groundwater monitoring location (MW304) reported an order of magnitude decrease for PFOS+PFHxS compared to May 2023. > 1 groundwater monitoring locations (MW321) reported an order of magnitude increase for PFOS+PFHxS, PFOS and PFOA compared to May 2023. > All other concentrations reported during this event were generally consistent with results reported in the previous event.
Surface Water Analytical Results	> 44 surface water samples were collected in total during the initial sampling event. > 2 surface water samples were collected in total during the resampling event. > No locations reported a first-time detection for PFOS, PFOS+PFHxS or PFOA. > No locations reported a new exceedance of the lowest adopted assessment criteria for PFOS, PFOA or PFOS+PFHxS. > 1 surface water location (SW387) reported an order of magnitude increase for PFOS and PFOS+PFHxS compared to the previous event. > All other concentrations reported during this event were generally consistent with previous sampling events.
Next Scheduled Monitoring Event	> The next OMP monitoring event is scheduled for May 2024. > SAQP to be reviewed and updated as required prior to the next monitoring event.

6 References

General References

1. Australian and New Zealand Guidelines (ANZG; 2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.
2. Defence (2021a), *PFAS OMP Factual Report Guidance*, Version 0.2, May 2021.
3. Defence (2021b), *Defence Contamination Management Manual (DCMM), Annex L – Data Management*, August 2018, Amended June 2021.
4. Environmental Protection Agency (United States EPA; 2002), EPA/240/R-02/004 *Guidance on Environmental Data Verification and Data Validation*, November 2002.
5. The Heads of EPAs Australia and New Zealand (HEPA; 2020), *PFAS National Environmental Management Plan (NEMP),* Version 2.0, January 2020.
6. National Environment Protection Council (NEPC; 2013), *National Environmental Protection (Assessment of Site Contamination) Measure* (as amended), registered May 2013.
7. National Health and Medical Research Council (2011 – updated 2018), *National Water Quality Management Strategy Australian Drinking Water Guidelines*, 6 August 2018.
8. Nation Health and Medical Research Council (NHMRC; 2019), *Guidance on Per and Poly-fluoroalkyl Substances (PFAS) in Recreational Water*, August 2019.
9. Standards Australia/Standards New Zealand (1998), AS5667.1:1998 *Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*.
10. Standards Australia (1999), AS4482.2-1999 *Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 – Non-volatile and semi-volatile compounds*.
11. USEPA (2006), *Guidance for the Data Quality Objectives Process*, EPA QA/G-4, U.S. Environmental Protection Agency.
12. USEPA (2002), *Guidance on Environmental Data Verification and Data Validation*, EPA QA/G-8, U.S. Environmental Protection Agency.

Site Specific References

13. Cardno (2023), *PFAS Ongoing Monitoring Plan Sampling and Analysis Quality Plan (SAQP) Bandiana Military Area*, Rev 1.5, 13 October 2023.
14. Golder (2018), *Detailed Site Investigation – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations*, 14 June 2018 (reference 1777738-081-R-RevB).
15. Golder (2020), *Human Health and Ecological Risk Assessment – Bandiana Military Area – Per- and Poly-fluoroalkyl Substances (PFAS) Investigations*, November 2020 (reference 1777738-150-R-RevB).
16. Golder (2020a), *PFAS Management Area Plan – Bandiana Military Area*, November 2020 (reference 1777738-153-R-RevA-PMAP, Final, November2020).

APPENDIX A

FIGURES

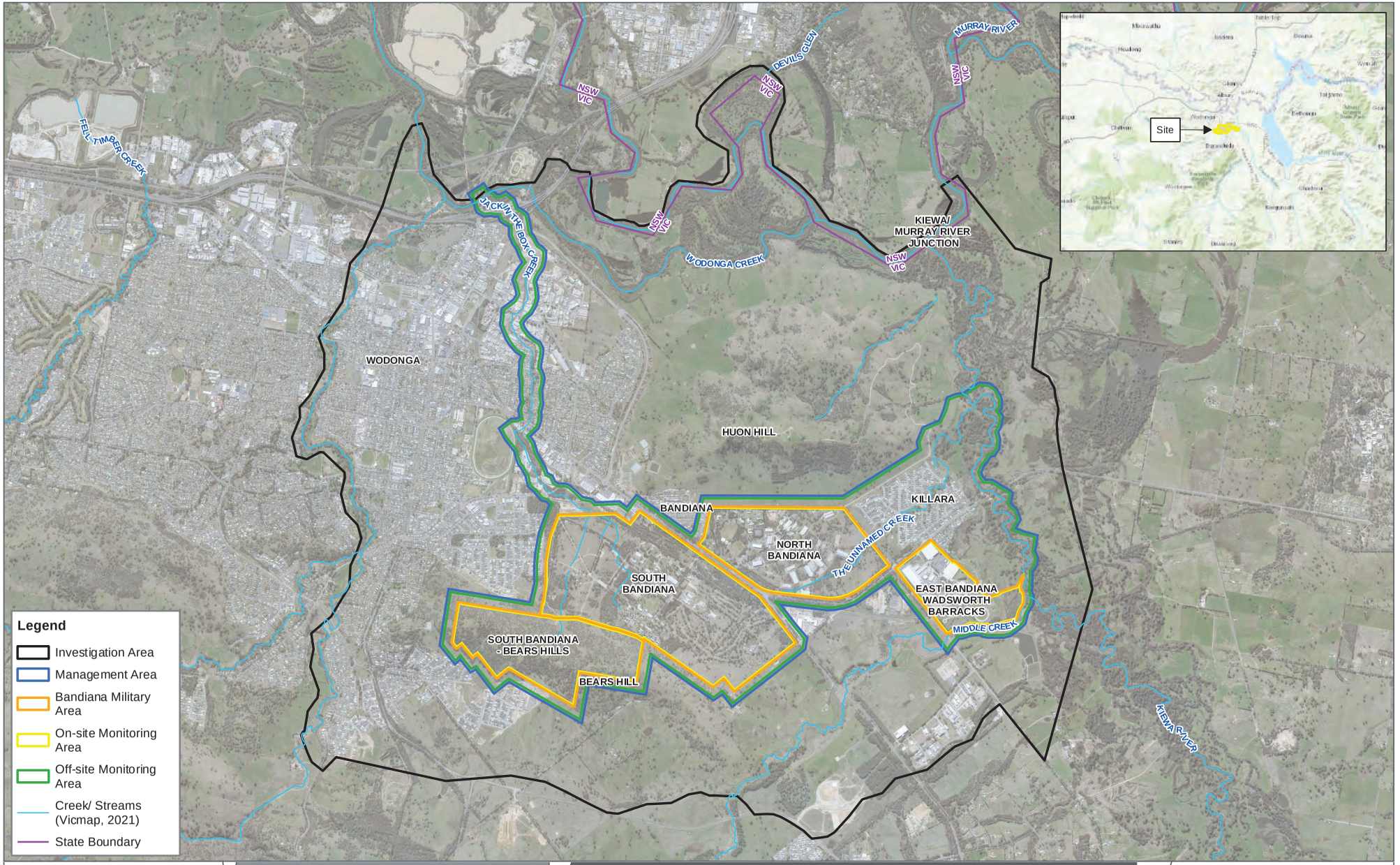


FIGURE 1

1:38,000 Scale at A3

Metres

0 1,000 2,000

Site Locality Plan

BI-ANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

N

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-04-11 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GIS-0150-SiteLocalityPlan_Bandiana.mxd 02
Aerial Imagery Supplied by Metromap (March, 2021)

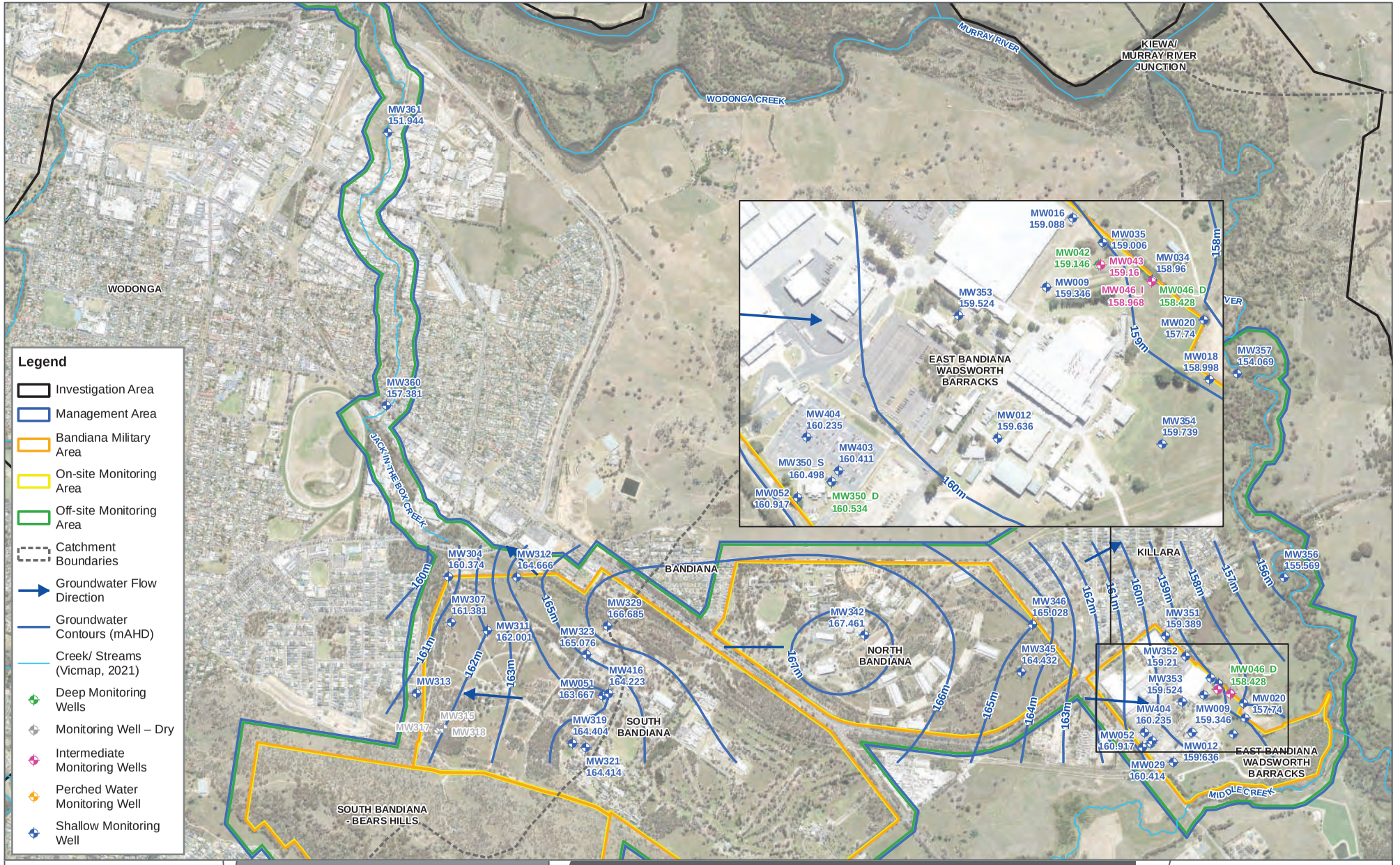


FIGURE 2

1:20,000 Scale at A3

Metres

0 500 1,000

Groundwater Elevation Contours - Regional Aquifer (October, 2023)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

N

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-12-22 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0395-GW_ElevContours_RegionalA_B_E5.mxd 01
Aerial Imagery Supplied by Metromap

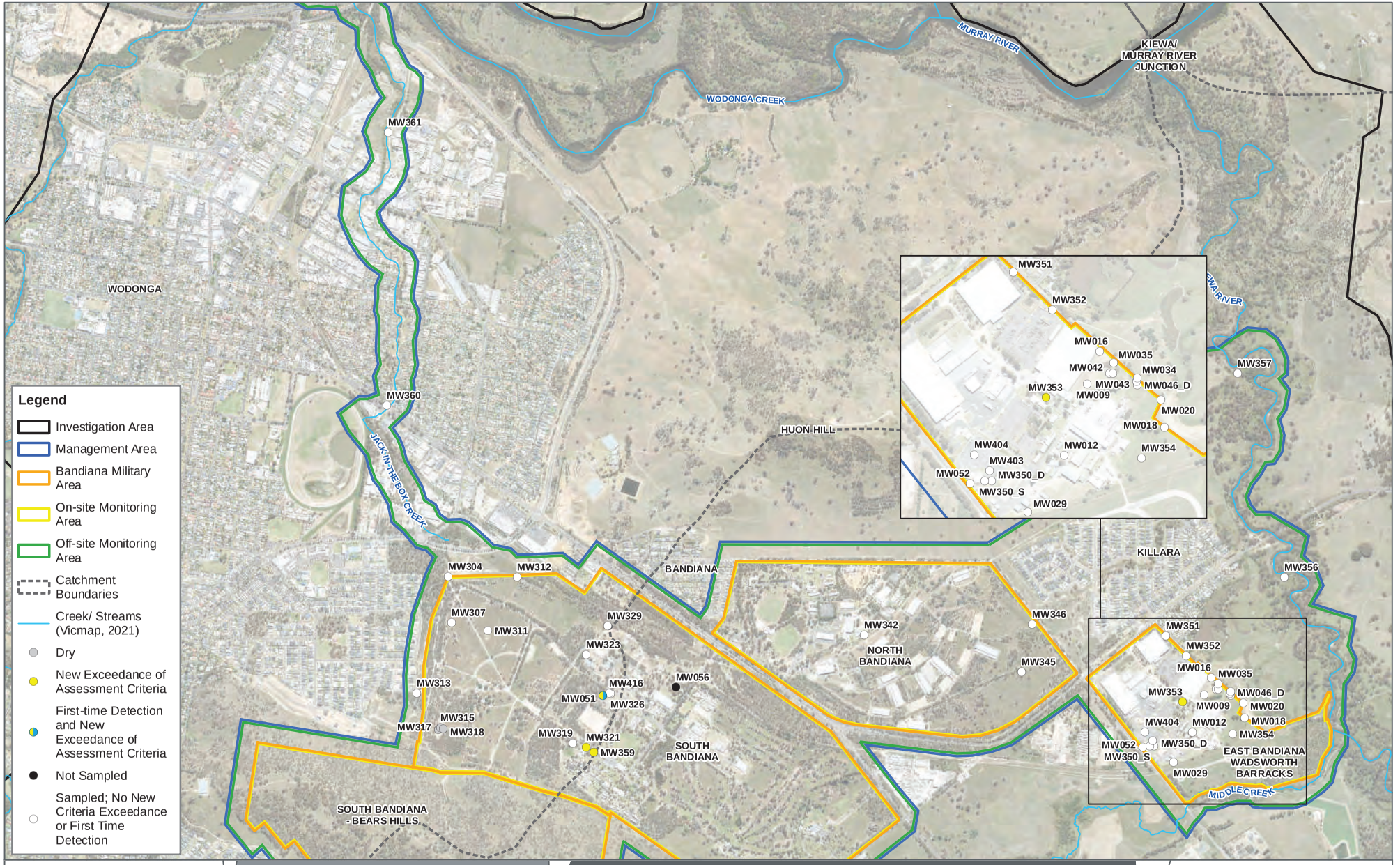


FIGURE 3

1:20,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary - Groundwater (October, 2023)

ANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2024-02-19 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0392-GW_PFAS_Results_Summary_B_E5.mxd 01
Aerial Imagery Supplied by Metromap

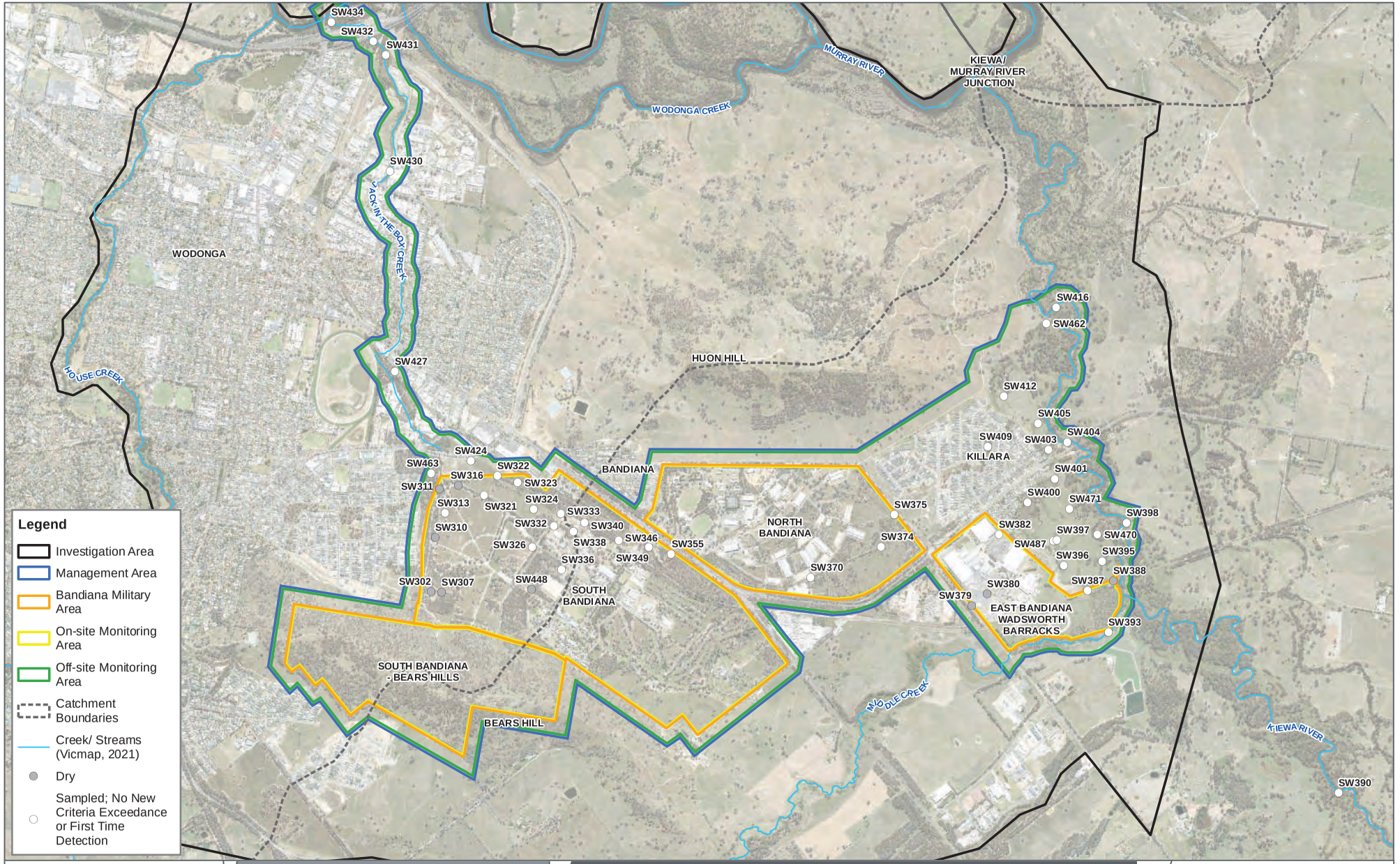


FIGURE 4

1:26,000 Scale at A3

Metres

0 500 1,000

PFAS Results Summary - Surface Water (October, 2023)

BIANNUAL SAMPLING EVENT
BANDIANA MILITARY AREA
DEPARTMENT OF DEFENCE

Cardno now Stantec

Map Produced by Cardno now Stantec
Date: 2023-12-20 | Project: DEF19008
Coordinate System: GDA 1994 MGA Zone 55
Map: DEF19008-GS-0393-SW_PFAS_Results_Summary_B_E5.mxd 01
Aerial Imagery Supplied by Metromap

APPENDIX B

DATA ASSESSMENT TABLES

																				Perfluorocarbons			
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					*0.00023*	*19*																	
Location Code	Date	Field ID	Sample Type	Lab Report Number																			
MW009	28 Nov 2017	0445E_MW09_S_171128	Normal	ES1730397	*3.32*	0.45	***9.92***	1.28	1.40	6.60	0.30	<0.02	0.3	0.40	1.85	0.29	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW009_211116	Normal	EM2122998	*2.67*	0.43	***6.81***	0.95	0.86	4.14	0.45	<0.02	0.2	0.34	1.36	0.25	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_MW009_220505	Normal	EM2208381	*3.50*	0.44	***9.69***	0.99	1.11	6.19	0.37	<0.02	0.2	0.40	1.32	0.29	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW009_221013	Normal	EM2220286	*3.16*	0.35	***8.31***	0.82	0.82	5.15	0.32	<0.02	0.2	0.28	1.22	0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW009_230505	Normal	EM2308015	*4.07*	0.25	***7.32***	0.48	0.53	3.25	0.25	<0.02	<0.1	0.19	0.87	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW009_20231026	Normal	EM2319356	*9.98*	**0.71**	***20.2***	1.35	1.55	10.2	0.81	<0.02	0.3	0.60	2.57	0.38	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC107_20231026	Field_D	EM2319356	*8.79*	**0.63**	***17.1***	1.24	1.30	8.35	0.70	<0.02	0.2	0.52	2.31	0.34	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC207_20231026	Interlab_D	1039507	*9.5*	**0.61**	***17.3***	1.1	1.1	7.8	0.74	<0.01	0.30	0.44	1.8	0.31	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
MW012	28 Nov 2017	0445E_MW12_S_171128	Normal	ES1730397	*0.04*	<0.01	**0.30**	<0.02	<0.02	0.26	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445E_QC100_171128	Field_D	ES1730397	*0.05*	<0.01	**0.37**	<0.02	<0.02	0.32	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Nov 2021	0445_MW012_211111	Normal	EM2122518	*0.07*	<0.01	**0.43**	<0.02	<0.02	0.36	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_MW012_220505	Normal	EM2208381	*0.09*	<0.01	**0.54**	0.02	0.03	0.45	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW012_221013	Normal	EM2220286	*0.03*	<0.01	**0.18**	0.03	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW012_230505	Normal	EM2308015	*0.08*	<0.01	**0.31**	<0.02	<0.02	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW012_20231026	Normal	EM2319356	*0.17*	<0.01	**0.41**	<0.02	<0.02	0.24	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW016	28 Nov 2017	0445E_MW16_S_171128	Normal	ES1730397	*7.35*	0.39	***11.6***	0.62	0.66	4.22	0.32	<0.02	0.1	0.20	0.95	0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW016_211116	Normal	EM2122998	*4.38*	0.31	***7.42***	0.40	0.40	3.04	0.25	<0.02	<0.1	0.16	0.68	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	09 May 2022	0445_MW016_220509	Normal	EM2208649	*6.14*	0.33	***9.36***	0.45	0.42	3.22	0.27	<0.02	<0.1	0.16	0.61	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW016_221013	Normal	EM2220286	*4.93*	0.29	***7.78***	0.40	0.42	2.85	0.21	<0.02	<0.1	0.13	0.65	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW016_230505	Normal	EM2308015	*2.38*	0.15	***3.90***	0.23	0.22	1.52	0.12	<0.02	<0.1	0.08	0.38	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW016_20231026	Normal	EM2319356	*6.78*	0.37	***10.4***	0.52	0.54	3.66	0.36	<0.02	<0.1	0.19	0.94	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW018	28 Nov 2017	0445E_MW18_S_171128	Normal	ES1730397	*0.13*	<0.01	**0.31**	0.02	<0.02	0.18	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW018_211116	Normal	EM2122998	*0.32*	<0.01	**0.67**	0.06	0.05	0.35	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_MW018_220505	Normal	EM2208381	*0.33*	<0.01	**0.66**	0.06	0.05	0.33	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW018_221013	Normal	EM2220286	*0.06*	<0.01	**0.16**	0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW018_230505	Normal	EM2308015	*0.35*	<0.01	**0.67**	0.05	0.04	0.32	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW018_20231026	Normal	EM2319356	*0.39*	<0.01	**0.81**	0.09	0.05	0.42	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW020	28 Nov 2017	0445E_MW20_S_171128	Normal	ES1730397	*0.72*	0.05	***2.34***	0.11	0.14	1.62	0.05	<0.02	<0.1	0.03	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW020_211116	Normal	EM2122998	*1.54*	0.07	***3.38***	0.15	0.16	1.84	0.09	<0.02	<0.1	0.05	0.23	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	03 May 2022	0445_MW020_220503	Normal	EM2208381	*1.29*	0.06	***2.77***	0.13	0.15	1.48	0.07	<0.02	<0.1	0.05	0.17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW020_221013	Normal	EM2220286	*1.15*	0.05	***2.42***	0.09	0.11	1.27	0.06	<0.02	<0.1	0.03	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	06 May 2023	0445_MW020_230506	Normal	EM2308015	*0.93*	0.04	***2.03***	0.08	0.10	1.10	0.06	<0.02	<0.1	0.03	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW020_20231026	Normal	EM2319356	*1.00*	0.06	***2.78***	0.09	0.11	1.78	0.09	<0.02	<0.1	0.04	0.19	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW029	11 Dec 2017	0445E_MW29_S_171211	Normal	ES1731478	*0.38*	0.04	**0.87**	0.12	0.11	0.49	<0.02	<0.02	<0.1	0.19	0.22	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	11 Nov 2021	0445_MW029_211111	Normal	EM2122518	*0.44*	0.06	**1.15**	0.13	0.13	0.71	0.02	<0.02	<0.1	0.16	0.25	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_MW029_220505	Normal	EM2208381	*0.64*	0.05	**1.28**	0.18	0.14	0.64	<0.02	<0.02	<0.1	0.22	0.29	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW029_221013	Normal	EM2220286	*0.43*	0.03	**0.87**	0.06	0.06	0.44	<0.02	<0.02	<0.1	0.07	0.13	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW029_230505	Normal	EM2308015	*0.46*	0.04	**1.03**	0.12	0.13	0.57	<0.02	<0.02	<0.1	0.12	0.26	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW029_20231026	Normal	EM2319356	*0.37*	0.04	**0.95**	0.10	0.10	0.58	<0.02	<0.02	<0.1	0.12	0.25	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW034	28 Nov 2017	0445E_MW34_S_171128	Normal	ES1730397	*0.73*	0.06	**1.59**	0.10	0.12	0.86	0.02	<0.02	<0.1	0.04	0.13	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW034_211116	Normal	EM2122998	*1.86*	0.12	***3.46***	0.26	0.21	1.60	0.13	<0.02	<0.1	0.09	0.34	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	03 May 2022	0445_MW034_220503	Normal	EM2208381	*1.57*	0.06	***2.57***	0.14	0.14	1.00	0.08	<0.02	<0.1	0.06	0.16	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC106_220503	Field_D	EM2208381	*1.27*	0.06	***2.35***	0.13	0.14	1.08	0.07	<0.02	<0.1	0.05	0.16	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_QC206_220505	Interlab_D	886780	*2.1*	0.09	***3.3***	0.14	0.15	1.2	0.06	<0.01	<0.05	0.05	0.20	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	13 Oct 2022	0445_MW034_221013	Normal	EM2220286	*1.17*	0.05	**1.93**	0.09	0.09	0.76	0.05	<0.02	<0.1	0.03	0.12	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW034_230505	Normal	EM2308015	*1.02*	0.03	**1.50**	0.05	0.06	0.48	0.04	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC109_230505	Field_D	EM2308015	*0.97*	0.03	**1.45**	0.05	0.06	0.48	0.03	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC209_230505	Interlab_D	987797	*1.1*	0.03	**1.59**	0.05	0.05	0.49	0.04	<0.01	<0.05	0.02	0.07	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	26 Oct 2023	0445_MW034_20231026	Normal	EM2319356	*0.85*	0.03	**1.36**	0.04	0.04	0.51	0.04	<0.02	<0.1	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW035	28 Nov 2017	0445E_MW35_S_171128	Normal	ES1730397	*3.97*	0.54	***12.1***	1.72	1.74	8.16	0.39	<0.02	0.4	0.55	2.40	0.41	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW035_211116	Normal	EM2122998	*3.32*	0.45	***7.45***	0.93	0.87	4.13	0.39	<0.02	0.2	0.34	1.41	0.26	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	03 May 2022	0445_MW035_220503	Normal	EM2208381	*5.07*	**0.59**	***12.4***	1.16	1.27	7.38	0.49	<0.02	0.2	0.48	1.62	0.35	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW035_221013	Normal	EM2220286	*5.96*	**0.59**	***14.5***	1.29	1.39	8.51	0.58	<0.02	0.2	0.44	1.98	0.34	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW035_230505	Normal	EM2308015	*7.66*	0.50	***14.7***	1.07	1.27	7.02	0.56	<0.02	0.2	0.44	1.88	0.30	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC106_230505	Field_D	EM2308015	*7.41*	0.56	***14.8***	1.21	1.06	7.35	0.54	<0.02	0.3	0.47	1.68	0.34	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC206_230505	Interlab_D	987797	*8.3*	**0.65**	***15.9***	1.1	1.1	7.6	0.78	<0.01	0.27	0.39	1.6	0.30	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	26 Oct 2023	0445_MW035_20231026	Normal	EM2319356	*8.75*	0.53	***16.0***	1.08	1.24	7.21	0.58	<0.02	0.2	0.40	1.71	0.30	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW042	28 Nov 2017	0445E_MW42_D_171128	Normal	ES1730397	*5.66*	**0.70**	***15.4***	1.99	2.07	9.76	0.50	<0.02	0.4	0.64	2.88	0.47	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	11 Nov 2021	QC204_211111	Interlab_D	841785	*4.3*	**0.65**	***11.3***	1.2	0.96	7.0	0.57	<0.01	0.33	0.36	1.9	0.32	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	12 Nov 2021	0445_MW042_211111	Normal	EM2122518	*3.61*	0.49	***8.66***	0.92	1.13	5.05	0.49	<0.02	0.2	0.35	1.62	0.31	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC104_211111	Field_D	EM2122518	*3.30*	0.46	***8.79***	0.99	0.81	5.49	0.38	<0.04	<0.2	0.33	1.52	0.24	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
	03 May 2022	0445_MW042_220503	Normal	EM2208381	*6.03*	**0.66**	***15.4***	1.42	1.57	9.35	0.56	<0.02	0.3	0.59	2.02	0.43	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW042_221013	Normal	EM2220286	*6.41*	**0.60**	***15.1***	1.29	1.40	8.70	0.59	<0.02	0.2	0.44	2.13	0.34	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW042_230505	Normal	EM2308015	*7.12*	0.48	***13.6***	1.04	1.00	6.49	0.54	<0.02	0.2	0.40	1.72	0.28	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW042_20231026	Normal	EM2319356	*7.94*	0.50	***14.8***	1.00	1.08	6.87	0.61	<0.02	0.2	0.40	1.72	0.28	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC108_20231026	Field_D	EM2319356	*7.03*	0.46	***13.5***	0.93	1.05	6.48	0.53	<0.02	0.2	0.37	1.59	0.26	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02

					Perfluorocarbons																		
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					*0.00023*	*19*																	
Location Code	Date	Field ID	Sample Type	Lab Report Number																			
		0445_QC208_20231026	Interlab_D	1039507	*7.4*	0.45	***13.2***	0.87	1.1	5.8	0.60	<0.01	0.22	0.33	1.3	0.24	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
MW043	28 Nov 2017	0445E_MW43_I_171128	Normal	ES1730397	*10.5*	**1.09**	***32.0***	3.11	3.28	21.5	0.88	<0.02	0.7	1.06	4.85	0.71	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW043_211116	Normal	EM2122998	*5.33*	**0.76**	***12.9***	1.60	1.73	7.54	0.81	<0.02	0.4	0.61	2.51	0.43	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	03 May 2022	0445_MW043_220503	Normal	EM2208381	*6.91*	**0.70**	***16.6***	1.52	1.63	9.65	0.59	<0.02	0.3	0.64	2.04	0.44	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW043_221013	Normal	EM2220286	*8.10*	0.53	***16.0***	1.14	1.20	7.92	0.54	<0.02	0.2	0.41	1.81	0.31	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW043_230505	Normal	EM2308015	*5.69*	0.36	***10.4***	0.75	0.74	4.68	0.40	<0.02	0.1	0.31	1.26	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW043_20231026	Normal	EM2319356	*6.46*	0.37	***11.2***	0.70	0.74	4.74	0.46	<0.02	0.1	0.30	1.22	0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW046_D	28 Nov 2017	0445E_MW46_D_171128	Normal	ES1730397	*2.05*	0.14	***4.31***	0.34	0.36	2.26	0.14	<0.02	<0.1	0.12	0.49	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	03 May 2022	0445_MW046D_220503	Normal	EM2208381	*2.88*	0.16	***4.97***	0.37	0.30	2.09	0.17	<0.02	<0.1	0.14	0.41	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW046_D_221013	Normal	EM2220286	*1.60*	0.06	***2.77***	0.13	0.13	1.17	0.07	<0.02	<0.1	0.05	0.21	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW046_D_230505	Normal	EM2308015	*1.65*	0.05	***2.82***	0.11	0.15	1.17	0.07	<0.02	<0.1	0.04	0.18	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW046_D_20231026	Normal	EM2319356	*2.46*	0.08	***4.26***	0.15	0.17	1.80	0.11	<0.02	<0.1	0.05	0.26	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW046_I	28 Nov 2017	0445E_MW47_I_171128	Normal	ES1730397	*1.99*	0.16	***4.27***	0.32	0.35	2.28	0.14	<0.02	<0.1	0.12	0.50	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2022	0445_MW046I_220503	Normal	EM2208381	*2.17*	0.10	***3.59***	0.20	0.20	1.42	0.11	<0.02	<0.1	0.08	0.24	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW046_I_221013	Normal	EM2220286	*1.76*	0.06	***2.98***	0.13	0.14	1.22	0.08	<0.02	<0.1	0.04	0.20	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW046_I_230505	Normal	EM2308015	*1.54*	0.05	***2.64***	0.12	0.14	1.10	0.07	<0.02	<0.1	0.04	0.19	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW046I_20231026	Normal	EM2319356	*2.48*	0.08	***4.14***	0.15	0.15	1.66	0.10	<0.02	<0.1	0.05	0.26	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW051	04 Dec 2017	0445S_MW04_S_171204	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05
	10 Nov 2021	QC200_211110	Interlab_D	841785	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	11 Nov 2021	0445_MW051_211110	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Nov 2021	0445_QC100_211110	Field_D	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Oct 2022	0445_MW051_20221012	Normal	EM2220286	***0.01***	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC104_20221012	Field_D	EM2220286	***0.01***	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC204_221012	Interlab_D	932350	***0.02***	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	25 Oct 2023	0445_MW051_20231025	Normal	EM2319356	***0.08***	<0.01	**0.13**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	28 Nov 2023	0445_MW051_231128	Normal	EM2321318	***0.09***	0.01	**0.16**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW052	01 Jun 2012	0445E_MW06-A_120601	Normal	ES1213811	*1.24*	**0.94**																	
		0445E_QC103_120601	Field_D	ES1213811	*1.18*	**0.91**																	
	07 Mar 2017	0445_MW06_070307	Normal	163195	*6.6*	**3.2**				53													
	11 Dec 2017	0445E_MW06A_S_171211	Normal	ES1731478	*7.17*	**1.37**	***26.5***	2.86	3.18	19.3	0.45	<0.02	0.6	1.24	4.23	0.98	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW052_211116	Normal	EM2122998	*7.23*	**0.67**	***11.0***	0.96	0.86	3.81	0.50	<0.02	0.3	0.39	1.60	0.36	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_MW052_220505	Normal	EM2208381	*9.31*	**0.63**	***14.4***	1.31	1.20	5.08	0.32	<0.02	0.3	0.50	2.14	0.61	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	14 Oct 2022	0445_MW052_221014	Normal	EM2220286	*10.4*	0.46	***13.7***	0.60	0.57	3.30	0.32	<0.02	0.2	0.20	1.04	0.28	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW052_230505	Normal	EM2308015	*10.7*	**0.81**	***19.5***	1.80	1.93	8.79	0.47	0.04	0.4	0.54	2.92	0.72	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW052_20231025	Normal	EM2319356	*31.2*	***10.6***	***174***	15.1	19.5	143	6.87	0.03	2.0	4.00	23.4	5.31	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	27 Nov 2023	0445_MW052_231127	Normal	EM2321318	*8.59*	**0.78**	***16.1***	1.37	1.44	7.54	0.50	<0.02	0.3	0.42	2.12	0.54	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	28 Nov 2023	0445_MW052_231128	Normal	EM2321318	*10.4*	**0.92**	***19.9***	1.51	1.72	9.49	0.68	<0.02	0.3	0.44	2.33	0.61	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW056	29 Nov 2017	0445S_BH111_P_171129	Normal	ES1730510	*0.97*	0.31	**1.71**	0.14	0.22	0.74	0.15	<0.02	<0.1	<0.02	0.23	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	11 Nov 2021	0445_MW056_211111	Normal	EM2122518	*0.70*	0.15	**1.50**	0.18	0.19	0.80	0.07	<0.02	<0.1	0.02	0.14	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Oct 2022	0445_MW056_221012	Normal	EM2220286	*0.66*	0.08	**1.08**	0.09	0.10	0.42	0.03	<0.02	<0.1	<0.02	0.07	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC105_20221012	Field_D	EM2220286	*0.30*	0.04	**0.53**	0.05	0.05	0.23	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC205_221012	Interlab_D	932350	*0.84*	0.10	**1.41**	0.12	0.12	0.57	0.04	<0.01	<0.05	0.02	0.09	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
MW304	06 Dec 2017	0445s_MW304_S_171206	Normal	ES1731108	***0.02***	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Nov 2021	0445_MW304_211110	Normal	EM2122518	***0.02***	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2022	0445_MW304_220504	Normal	EM2208381	***0.06***	<0.02	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC107_220504	Field_D	EM2208381	***0.07***	<0.02	**0.12**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC207_220504	Interlab_D	886780	***0.10***	<0.01	**0.16**	<0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	10 Oct 2022	0445_MW304_221010	Normal	EM2220286	*0.30*	0.03	**0.62**	0.05	0.03	0.32	0.06	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2023	0445_MW304_230504	Normal	EM2308015	*0.14*	<0.02	**0.34**	0.03	<0.02	0.20	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC105_230504	Field_D	EM2308015	***0.10***	<0.02	**0.24**	0.02	<0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC205_230504	Interlab_D	987797	*0.15*	0.02	**0.32**	0.02	0.02	0.17	0.02	<0.01	<0.05	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	26 Oct 2023	0445_MW304_20231026	Normal	EM2319356	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW307	06 Dec 2017	0445s_MW307_S_171206	Normal	ES1731108	*0.25*	0.01	**0.37**	0.02	<0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445s_QC110_171206	Field_D	ES1731108	*0.25*	0.01	**0.35**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	11 Nov 2021	0445_MW307_211110	Normal	EM2122518	*70.4*	***34.2***	***422***	87.7	61.2	352	28.4	<0.04	7.1	57.5	140	23.0	0.48	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
	22 Dec 2021	0445_MW307_211222	Normal	EM2125903	*94.3*	***44.2***	***590***	107	97.6	496	41.2	<0.05	13.4	71.3	170	31.5	0.60	<0.05	<0.05	<0.05	<0.05	<0.14	<0.05
		0445_QC101_211222	Field_D	EM2125903	*91.0*	***44.8***	***577***	110	85.9	486	38.6	<0.05	12.4	71.0	168	32.1	0.60	<0.05	<0.05	<0.05	<0.05	<0.13	<0.05
		0445_QC201_211222	Interlab_D	852797	*66*	**8.9**	***456***	68	74	390	27	<0.01	4.5	16	39	9.5	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	04 May 2022	0445_MW307_220504	Normal	EM2208381	*88.8*	***49.4***	***644***	119	115	555	55.6	<0.04	16.1	72.7	221	35.5	0.62	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
	10 Oct 2022	0445_MW307_221010	Normal	EM2220286	*13.7*	**4.88**	***72.0***	10.9	10.6	58.3	5.98	<0.02	0.9	7.32	17.3	3.06	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2023	0445_MW307_230504	Normal	EM2308015	*84.1*	***35.9***	***454***	76.5	63.1	370	36.3	<0.04	10.0	50.2	122	22.3	0.50	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
	26 Oct 2023	0445_MW307_20231026	Normal	EM2319356	*101*	***42.2***	***580***	91.3	85.6	479	40.4	<0.04	9.7	60.6	143	28.1	0.66	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
MW311	05 Dec 2017	0445S_MW311_S_171205	Normal	ES1731167	***0.02***	<0.01	**0.09**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445S_QC108_171205	Field_D	ES1731167	***0.02***	<0.01	**0.09**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	17 Nov 2021	0445_MW311_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Oct 2022	0445_MW311_221010	Normal	EM2220286	***0.02***	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02

					Perfluorocarbons																			
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																	
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																	
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																		
PFAS NEMP 2.0 Table 5 Freshwater 99%					*0.00023*	*19*																		
Location Code	Date	Field ID	Sample Type	Lab Report Number																				
	27 Oct 2023	0445_MW311_20231026	Normal	EM2319356	*0.02*	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW312	06 Dec 2017	0445s_MW312_S_171206	Normal	ES1731108	<0.01	<0.01	**0.12**	0.02	0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Nov 2021	0445_MW312_21110	Normal	EM2122518	*0.02*	<0.01	**0.16**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2022	0445_MW312_220504	Normal	EM2208381	<0.01	<0.01	**0.10**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Oct 2022	0445_MW312_221010	Normal	EM2220286	*0.04*	<0.01	**0.15**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2023	0445_MW312_230504	Normal	EM2308015	*0.12*	0.01	**0.36**	0.02	0.04	0.24	0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW312_20231026	Normal	EM2319356	*0.13*	0.01	**0.37**	0.03	0.03	0.24	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW313	09 Dec 2017	0445_MW313_D_171209	Normal	ES1731468	*0.0039*	<0.0005	0.0052	<0.0005	<0.0005	0.0013	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	11 Nov 2021	0445_MW313_211111	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	15 Oct 2022	0445_MW313_221015	Normal	EM2220271	*0.01*	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	27 Oct 2023	0445_MW313_20231027	Normal	EM2319354	*0.02*	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW315	06 Dec 2017	0445s_MW315_D_171206	Normal	ES1731108	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	17 Nov 2021	0445_MW315_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW317	06 Dec 2017	0445s_MW317_D_171206	Normal	ES1731108	*0.05*	<0.01	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW319	04 Dec 2017	0445S_MW319_D_171204	Normal	ES1731167	*0.22*	<0.01	**0.31**	0.03	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Nov 2021	0445_MW319_211110	Normal	EM2122518	*0.28*	<0.01	**0.37**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		QC201_211110	Interlab_D	841785	*0.39*	<0.01	**0.51**	0.01	<0.01	0.12	<0.01	<0.01	<0.05	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	12 Nov 2021	0445_QC101_211110	Field_D	EM2122518	*0.31*	<0.01	**0.39**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Oct 2022	0445_MW319_221012	Normal	EM2220286	*0.20*	<0.01	**0.26**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC203_221012	Interlab_D	932350	*0.22*	<0.01	**0.28**	<0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	25 Oct 2023	0445_MW319_20231025	Normal	EM2319356	*0.18*	<0.01	**0.22**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC106_20231025	Field_D	EM2319356	*0.17*	<0.01	**0.21**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC206_20231025	Interlab_D	1039507	*0.14*	<0.01	**0.17**	<0.01	<0.01	0.03	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
MW321	05 Dec 2017	0445S_MW321_S_171205	Normal	ES1731167	*6.01*	0.10	***7.65***	0.05	0.06	1.64	0.38	<0.02	<0.1	0.02	0.16	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Nov 2021	0445_MW321_211110	Normal	EM2122518	*0.73*	<0.01	**0.92**	<0.02	<0.02	0.19	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Oct 2022	0445_MW321_221210	Normal	EM2220286	*0.58*	<0.01	**0.75**	<0.02	<0.02	0.17	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC102_20221012	Field_D	EM2220286	*0.55*	<0.01	**0.70**	<0.02	<0.02	0.15	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC202_221012	Interlab_D	932350	*0.07*	<0.01	**0.09**	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	25 Oct 2023	0445_MW321_20231025	Normal	EM2319356	*983*	***11.6***	***1,180***	3.40	6.08	195	59.5	<0.04	0.2	1.66	11.2	2.18	1.96	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
	27 Nov 2023	0445_MW321_231127	Normal	EM2321318	*491*	**9.16**	***608***	2.38	3.91	117	31.4	<0.02	0.3	0.96	6.08	1.42	1.27	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	28 Nov 2023	0445_MW321_231128	Normal	EM2321318	*820*	***11.2***	***984***	3.89	8.84	164	40.6	<0.02	0.4	1.62	11.0	2.14	2.24	0.04	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC101_231128	Field_D	EM2321318	*455*	**7.68**	***570***	2.28	5.21	115	31.7	<0.02	0.3	0.93	5.78	1.32	1.09	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC201_231128	Interlab_D	1049115	*480*	**5.8**	***579***	1.8	2.6	99	20	<1	0.28	0.86	5.0	1.2	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.05
MW323	30 Nov 2017	0445S_MW323_S_171130	Normal	ES1730642	*0.02*	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445S_QC104_S_171130	Field_D	ES1730642	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 Dec 2017	0445S_QC204_171130	Interlab_D	575864	*0.02*	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	10 Nov 2021	0445_MW323_211110	Normal	EM2122518	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Oct 2022	0445_MW323_221210	Normal	EM2220286	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW323_20231025	Normal	EM2319356	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW326	04 Dec 2017	0445S_MW326_S_171204	Normal	ES1731167	*0.03*	<0.01	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Nov 2021	0445_MW326_211110	Normal	EM2122518	*0.03*	<0.01	**0.29**	0.46	0.11	0.26	<0.02	<0.02	<0.1	0.05	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW329	04 Dec 2017	0445S_MW329_S_171204	Normal	ES1731167	*0.02*	<0.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Nov 2021	0445_MW329_21110	Normal	EM2122518	*0.03*	<0.01	**0.17**	0.04	0.03	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC102_211110	Field_D	EM2122518	*0.03*	<0.01	**0.17**	0.04	0.03	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		QC202_211110	Interlab_D	841785	*0.03*	<0.01	**0.19**	0.04	0.03	0.16	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	12 Oct 2022	0445_MW329_221012	Normal	EM2220286	*0.03*	<0.01	**0.37**	0.20	0.10	0.34	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW329_20231025	Normal	EM2319356	*0.06*	<0.01	**0.42**	0.14	0.09	0.36	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW342	07 Dec 2017	0445N_MW342_S_171207	Normal	ES1731478	<0.01	<0.01	**0.09**	0.03	0.04	0.09	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	11 Nov 2021	0445_MW342_211111	Normal	EM2122518	*9.21*	0.22	***13.5***	0.88	0.53	4.31	0.36	<0.02	<0.1	0.24	0.95	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	22 Dec 2021	0445_MW342_211222	Normal	EM2125903	*4.15*	0.20	***9.15***	0.94	0.78	5.00	0.36	<0.02	0.1	0.24	1.10	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC100_211222	Field_D	EM2125903	*4.37*	0.21	***9.48***	0.89	0.70	5.11	0.37	<0.02	0.1	0.24	1.13	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC200_211222	Interlab_D	852797	*5.8*	0.32	***12.6***	1.1	1.0	6.8	0.41	<0.01	0.20	0.30	1.4	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	06 May 2022	0445_MW342_220506	Normal	EM2208381	*4.00*	0.16	***8.59***	0.68	0.51	4.59	0.26	<0.02	<0.1	0.22	0.81	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC111_220506	Field_D	EM2208381	*3.97*	0.17	***8.58***	0.74	0.53	4.61	0.26	<0.02	<0.1	0.22	0.75	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC211_220506	Interlab_D	886780	*4.9*	0.21	***11.3***	0.91	0.75	6.4	0.28	<0.01	0.14	0.19	0.88	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	15 Oct 2022	0445_MW342_221015	Normal	EM2220286	*3.04*	0.11	***5.93***	0.46	0.39	2.89	0.14	<0.02	<0.1	0.12	0.58	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2023	0445_MW342_230504	Normal	EM2308015	*2.56*	0.08	***4.81***	0.35	0.37	2.25	0.11	<0.02	<0.1	0.09	0.39	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW342_20231026	Normal	EM2319356	*3.37*	0.09	***5.65***	0.30	0.30	2.28	0.11	<0.02	<0.1	0.08	0.36	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW345	07 Dec 2017	0445N_MW345_S_171207	Normal	ES1731478	*0.10*	<0.01	**0.30**	<0.02	0.03	0.20	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	17 Nov 2021	0445_MW345_211117	Normal	EM2122998	*0.02*	<0.01	**0.25**	0.06	0.05	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	06 May 2022	0445_MW345_220506	Normal	EM2208381	*0.03*	<0.01	**0.24**	0.04	0.03	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Oct 2022	0445_MW345_221014	Normal	EM2220286	*0.08*	<0.01	**0.32**	0.05	0.04	0.24	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW345_230505	Normal	EM2308015	*0.09*	<0.02	**0.32**	0.05	0.04	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW345_20231026	Normal	EM2319356	*0.10*	<0.01	**0.34**	0.06	0.04	0.24	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW346	07 Dec 2017	0445N_MW346_S_171207	Normal	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445N_QC212_171207	Normal	577514	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05

					Perfluorocarbons																			
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																	
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																	
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																		
PFAS NEMP 2.0 Table 5 Freshwater 99%					*0.00023*	*19*																		
Location Code	Date	Field ID	Sample Type	Lab Report Number																				
	11 Dec 2017	0445N_QC112_171207	Field_D	ES1731478	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW346_211117	Normal	EM2122998	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	06 May 2022	0445_MW346_220506	Normal	EM2208381	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Oct 2022	0445_MW346_221012	Normal	EM2220286	*0.10*	<0.01	**0.17**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2023	0445_MW346_230504	Normal	EM2308015	*0.02*	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW346_20231026	Normal	EM2319356	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW350_D	10 Dec 2017	0445E_MW350_D_171210	Normal	ES1731478	*0.27*	0.02	**0.63**	<0.02	0.06	0.36	0.02	<0.02	<0.1	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	11 Nov 2021	0445_MW350_D_211111	Normal	EM2122518	*0.33*	0.02	**0.60**	0.04	0.03	0.27	0.02	<0.02	<0.1	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	03 May 2022	0445_MW350_D_220503	Normal	EM2208381	*0.28*	0.02	**0.53**	0.10	0.04	0.25	0.02	<0.02	<0.1	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	14 Oct 2022	0445_MW350_D_221014	Normal	EM2220286	*0.32*	0.02	**0.62**	0.10	0.04	0.30	0.02	<0.02	<0.1	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW350_ _D_230505	Normal	EM2308015	*0.44*	0.02	**0.73**	0.04	0.04	0.29	0.03	<0.02	<0.1	<0.02	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW350_D_20231025	Normal	EM2319356	*0.43*	0.02	**0.73**	0.07	0.03	0.30	0.02	<0.02	<0.1	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW350_S	10 Dec 2017	0445E_MW350_S_171210	Normal	ES1731478	*15.2*	**4.24**	***90.2***	7.42	10.4	75.0	2.02	<0.02	1.9	4.72	14.0	1.87	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	11 Nov 2021	0445_MW350_S_211111	Normal	EM2122518	*15.3*	**3.05**	***48.7***	3.62	2.60	33.4	2.86	<0.04	0.6	1.39	5.72	1.16	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
		0445_QC105_211111	Field_D	EM2122518	*15.2*	**3.06**	***48.9***	3.65	2.70	33.7	2.91	<0.04	0.9	1.45	5.86	1.24	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
		QC205_211111	Interlab_D	841785	*19*	**2.8**	***69***	4.0	5.0	50	2.8	<0.01	0.95	1.3	7.0	1.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	06 May 2022	0445_MW350_S_220506	Normal	EM2208381	*17.8*	**2.67**	***43.4***	2.43	2.69	25.6	2.32	<0.02	0.8	1.71	4.45	1.33	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	14 Oct 2022	0445_MW350_S_221014	Normal	EM2220286	*19.3*	**1.74**	***37.2***	1.37	1.89	17.9	1.93	<0.02	0.4	0.99	3.51	0.62	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW350_S_230505	Normal	EM2308015	*45.5*	**5.20**	***98.8***	2.80	4.12	53.3	4.94	<0.02	0.9	2.53	8.28	1.55	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW350_S_20231025	Normal	EM2319356	*69.1*	**5.64**	***140***	2.64	4.52	71.4	5.47	<0.02	1.0	2.58	9.98	1.54	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW351	11 Dec 2017	0445E_MW351_S_171211	Normal	ES1731478	*0.03*	<0.01	0.07	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW351_211116	Normal	EM2122998	*0.01*	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	03 May 2022	0445_MW351_220503	Normal	EM2208381	*0.01*	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC100_220503	Field_D	EM2208381	*0.01*	<0.01	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC200_220503	Interlab_D	886780	*0.01*	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01
	13 Oct 2022	0445_MW351_221013	Normal	EM2220286	*0.02*	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW351_230505	Normal	EM2308015	*0.03*	<0.01	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC107_230505	Field_D	EM2308015	*0.02*	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC207_230505	Interlab_D	987797	*0.02*	<0.01	0.04	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01
	25 Oct 2023	0445_MW351_20231025	Normal	EM2319356	*0.02*	<0.01	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW352	11 Dec 2017	0445E_MW352_S_171211	Normal	ES1731478	*0.02*	<0.01	**0.10**	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW352_211116	Normal	EM2122998	*0.01*	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	03 May 2022	0445_MW352_220503	Normal	EM2208381	*0.01*	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW352_221013	Normal	EM2220286	*0.02*	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW352_230505	Normal	EM2308015	*0.02*	<0.01	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW352_20231025	Normal	EM2319356	*0.01*	<0.01	0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW353	11 Dec 2017	0445E_MW353_S_171211	Normal	ES1731478	*3.14*	0.32	***8.98***	0.70	0.76	5.84	0.27	<0.02	<0.1	0.26	0.86	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Nov 2021	0445_MW353_211111	Normal	EM2122518	*3.85*	0.22	***7.05***	0.46	0.43	3.20	0.26	<0.02	<0.1	0.13	0.53	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_MW353_220505	Normal	EM2208381	*3.10*	0.18	***5.93***	0.40	0.40	2.83	0.21	<0.02	<0.1	0.11	0.37	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW353_221013	Normal	EM2220286	*2.54*	0.14	***4.94***	0.30	0.34	2.40	0.16	<0.02	<0.1	0.06	0.35	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW353_230505	Normal	EM2308015	*3.28*	0.33	***10.1***	1.34	1.50	6.78	0.35	<0.02	0.2	0.34	1.56	0.25	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW353_20231026	Normal	EM2319356	*4.60*	**0.67**	***18.8***	2.97	2.43	14.2	0.81	<0.02	0.2	0.89	2.42	0.56	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW354	11 Dec 2017	0445E_MW354_S_171211	Normal	ES1731478	*0.03*	<0.01	**0.17**	<0.02	0.02	0.14	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445E_QC116_171211	Field_D	ES1731478	*0.10*	0.01	**0.27**	0.03	0.04	0.17	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	16 Nov 2021	0445_MW354_211116	Normal	EM2122998	*0.15*	0.01	**0.38**	0.04	0.03	0.23	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_MW354_220505	Normal	EM2208381	*0.11*	<0.01	**0.21**	0.03	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	13 Oct 2022	0445_MW354_221013	Normal	EM2220286	*0.08*	<0.01	**0.15**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW354_230505	Normal	EM2308015	*0.08*	<0.01	**0.14**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW354_20231026	Normal	EM2319356	*0.05*	<0.01	**0.08**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC109_20231026	Field_D	EM2319356	*0.05*	<0.01	**0.09**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC209_20231026	Interlab_D	1039507	*0.04*	<0.01	0.06	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
MW356	09 Dec 2017	0445_MW356_S_171209	Normal	ES1731468	*0.0009*	<0.0005	0.0019	<0.0005	<0.0005	0.0010	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_MW356_211112	Normal	EM2122519	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	07 May 2022	0445_MW356_220505	Normal	EM2208383	<0.01	<0.01	0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2023	0445_MW356_230505	Normal	EM2308009	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW356_20231025	Normal	EM2319354	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW357	09 Dec 2017	0445_MW357_S_171209	Normal	ES1731468	*0.0262*	0.0011	**0.111**	0.0082	0.0089	0.0844	0.0018	<0.0005	<0.002	0.0010	0.0040	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC114_171209	Field_D	ES1731468	*0.0254*	0.0011	**0.104**	0.0064	0.0097	0.0788	0.0018	<0.0005	<0.002	0.0006	0.0025	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_MW357_211112	Normal	EM2122519	*0.03*	<0.01	0.07	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	06 May 2022	0445_MW357_220506	Normal	EM2208383	*0.01*	<0.01	0.04	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Oct 2022	0445_MW357_221012	Normal	EM2220271	*0.02*	<0.01	0.06	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2023	0445_MW357_230504	Normal	EM2308009	*0.04*	<0.01	**0.08**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	24 Oct 2023	0445_MW357_20231024	Normal	EM2319354	*0.02*	<0.01	0.05	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW359	05 Dec 2017	0445S_MW359_D_171205	Normal	ES1731167	*0.03*	<0.01	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	28 Nov 2023	0445_MW359_231128	Normal	EM2321318	*0.11*	<0.01	**0.26**	<0.02	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW360	09 Dec 2017	0445_MW360_S_171209	Normal	ES1731468	*0.0836*	0.0009	**0.232**	0.0087	0.0173	0.148	0.0048	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

																				Perfluorocarbons			
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					*0.00023*	*19*																	
Location Code	Date	Field ID	Sample Type	Lab Report Number																			
	11 Nov 2021	0445_MW360_211111	Normal	EM2122519	*0.06*	<0.01	**0.15**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	06 May 2022	0445_MW360_220506	Normal	EM2208383	*0.05*	<0.01	**0.11**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	15 Oct 2022	0445_MW360_221015	Normal	EM2220271	*0.08*	<0.01	**0.17**	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2023	0445_MW360_230504	Normal	EM2308009	*0.08*	<0.01	**0.14**	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW360_20231025	Normal	EM2319354	*0.07*	<0.01	**0.12**	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW361	09 Dec 2017	0445_MW361_S_171209	Normal	ES1731468	*0.0488*	0.0098	**0.296**	0.0110	0.0166	0.247	0.0053	<0.0005	<0.002	0.0155	0.0199	0.0096	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC115_171209	Field_D	ES1731468	*0.0454*	0.0099	**0.282**	0.0094	0.0141	0.237	0.0050	<0.0005	<0.002	0.0072	0.0206	0.0093	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	11 Nov 2021	0445_MW361_211111	Normal	EM2122519	*0.08*	0.01	**0.21**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	07 May 2022	0445_MW361_220506	Normal	EM2208381	*0.07*	0.01	**0.21**	0.02	<0.02	0.14	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	15 Oct 2022	0445_MW361_221015	Normal	EM2220271	*0.08*	<0.01	**0.11**	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	04 May 2023	0445_MW361_230504	Normal	EM2308009	*0.10*	<0.01	**0.14**	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW361_20231025	Normal	EM2319354	*0.10*	0.02	**0.17**	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW403	10 Dec 2017	0445E_BH01_S_171210	Normal	ES1731478	*39.4*	**3.38**	***96.2***	8.93	9.20	56.8	2.65	<0.02	2.2	4.94	14.7	1.87	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	12 Nov 2021	0445_MW403_211111	Normal	EM2122518	*52.3*	**4.41**	***93.9***	5.04	5.46	41.6	3.48	<0.04	1.1	2.23	9.86	1.69	0.05	<0.04	<0.04	<0.04	<0.04	<0.10	<0.04
	05 May 2022	0445_MW403_220505	Normal	EM2208381	*52.7*	**3.42**	***98.7***	5.98	7.17	46.0	4.26	<0.04	1.3	2.40	11.2	1.66	0.06	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
	14 Oct 2022	0445_MW403_221014	Normal	EM2220286	*58.1*	**2.85**	***87.3***	4.15	3.95	29.2	2.90	<0.03	0.8	1.59	7.21	1.01	0.04	<0.03	<0.03	<0.03	<0.03	<0.08	<0.03
	05 May 2023	0445_MW403_230505	Normal	EM2308015	*38.1*	**3.04**	***80.5***	6.47	7.04	42.4	2.42	<0.02	1.4	2.80	10.3	1.80	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	26 Oct 2023	0445_MW403_2023102	Normal	EM2319356	*40.8*	**3.55**	***103***	7.80	10.2	62.2	2.73	<0.02	1.8	3.34	14.4	2.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW404	10 Dec 2017	0445E_BH02_S_171210	Normal	ES1731478	*65.7*	**6.80**	***118***	9.63	10.0	52.4	4.29	<0.02	1.9	5.15	12.3	3.38	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	11 Nov 2021	0445_MW404_211111	Normal	EM2122518	*50.2*	**3.86**	***81.1***	5.20	3.16	30.9	2.81	<0.04	0.8	1.66	7.59	1.73	<0.04	<0.04	<0.04	<0.04	<0.04	<0.10	<0.04
		0445_QC103_211111	Field_D	EM2122518	*40.9*	**3.96**	***69.3***	5.33	2.88	28.4	2.75	<0.04	1.1	1.74	7.32	1.86	<0.04	<0.04	<0.04	<0.04	<0.04	<0.11	<0.04
		QC203_211111	Interlab_D	841785	*47*	**3.4**	***84***	4.7	4.6	37	1.7	<0.01	0.96	1.4	6.9	1.6	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	05 May 2022	0445_MW404_220505	Normal	EM2208381	*56.2*	**4.02**	***101***	7.16	9.16	45.2	4.18	<0.04	1.2	2.63	13.3	2.80	<0.04	<0.04	<0.04	<0.04	<0.04	<0.09	<0.04
	14 Oct 2022	0445_MW404_221014	Normal	EM2220286	*82.4*	**6.44**	***156***	12.8	13.0	74.0	4.68	<0.03	1.6	4.15	19.6	4.22	0.04	<0.03	<0.03	<0.03	<0.03	<0.08	<0.03
	05 May 2023	0445_MW404_230505	Normal	EM2308015	*96.4*	***12.2***	***198***	19.5	18.2	102	6.71	<0.03	2.6	6.13	31.2	7.04	0.05	<0.03	<0.03	<0.03	<0.03	<0.09	<0.03
	26 Oct 2023	0445_MW404_20231025	Normal	EM2319356	*104*	***10.3***	***214***	13.9	16.8	110	6.86	<0.02	2.6	5.10	25.1	5.41	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
MW416	06 May 2023	0445_MW416_230506	Normal	EM2308015	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	25 Oct 2023	0445_MW416_20231025	Normal	EM2319356	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC105_20231025	Field_D	EM2319356	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC205_20231024	Interlab_D	1039507	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05
OTH019	31 Oct 2018	0445_OTH019_181031	Normal	ES1832670	*0.0370*	0.0053	**0.171**	0.0095	0.0102	0.134	0.0054	<0.0005	<0.002	<0.0005	0.0056	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC120_181031	Field_D	ES1832670	*0.0375*	0.0058	**0.178**	0.0100	0.0105	0.141	0.0056	<0.0005	<0.002	<0.0005	0.0054	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC220_181031	Interlab_D	625560	*0.037*	0.004	**0.157**	0.010	0.009	0.12	0.004	<0.001	<0.005	<0.001	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005
	15 Nov 2021	0445_OTH019_211115	Normal	EM2122969	*0.05*	<0.01	**0.18**	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	05 May 2022	0445_OTH019_220505	Normal	EM2208348	*0.04*	<0.01	**0.15**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	10 Nov 2022	0445_OTH019_221110	Normal	EM2222364	*0.03*	<0.01	**0.13**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC110_221110	Field_D	EM2222364	*0.03*	<0.01	**0.13**	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
		0445_QC210_221110	Interlab_D	941104	*0.05*	<0.01	**0.15**	<0.01	<0.01	0.10	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
	02 May 2023	0445_OTH019_230502	Normal	EM2308003	*0.05*	<0.01	**0.16**	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
	23 Oct 2023	0445_OTH019_20231023	Normal	EM2319355	*0.06*	<0.01	**0.22**	<0.02	<0.02	0.16	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of lowest adopted screening criteria in latest monitoring round

					N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																	
PFAS NEMP 2.0 Table 1 Health Recreational Water																	
PFAS NEMP 2.0 Table 5 Freshwater 95%																	
PFAS NEMP 2.0 Table 5 Freshwater 99%																	
Location Code	Date	Field ID	Sample Type	Lab Report Number													
MW009	28 Nov 2017	0445E_MW09_S_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.2		
	16 Nov 2021	0445_MW009_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.6		
	05 May 2022	0445_MW009_220505	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	14.9		
	13 Oct 2022	0445_MW009_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	12.6		
	05 May 2023	0445_MW009_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	10.1		
	26 Oct 2023	0445_MW009_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.28	<0.05	<0.05	28.7		
		0445_QC107_20231026	Field_D	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.25	<0.05	<0.05	24.6		
		0445_QC207_20231026	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.21	<0.01	<0.01	24.36	10.11	17.91
MW012	28 Nov 2017	0445E_MW12_S_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.30		
		0445E_QC100_171128	Field_D	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37		
	12 Nov 2021	0445_MW012_211111	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.43		
	05 May 2022	0445_MW012_220505	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.62		
	13 Oct 2022	0445_MW012_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21		
	05 May 2023	0445_MW012_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31		
	26 Oct 2023	0445_MW012_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41		
MW016	28 Nov 2017	0445E_MW16_S_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15.0		
	16 Nov 2021	0445_MW016_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.77		
	09 May 2022	0445_MW016_220509	Normal	EM2208649	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.8		
	13 Oct 2022	0445_MW016_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	10.0		
	05 May 2023	0445_MW016_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.16		
	26 Oct 2023	0445_MW016_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.6		
MW018	28 Nov 2017	0445E_MW18_S_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33		
	16 Nov 2021	0445_MW018_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78		
	05 May 2022	0445_MW018_220505	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77		
	13 Oct 2022	0445_MW018_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18		
	05 May 2023	0445_MW018_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.76		
	26 Oct 2023	0445_MW018_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.95		
MW020	28 Nov 2017	0445E_MW20_S_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.91		
	16 Nov 2021	0445_MW020_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.16		
	03 May 2022	0445_MW020_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.42		
	13 Oct 2022	0445_MW020_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.91		
	06 May 2023	0445_MW020_230506	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.47		
	26 Oct 2023	0445_MW020_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.38		
MW029	11 Dec 2017	0445E_MW29_S_171211	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.61		
	11 Nov 2021	0445_MW029_211111	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.98		
	05 May 2022	0445_MW029_220505	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.26		
	13 Oct 2022	0445_MW029_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.26		
	05 May 2023	0445_MW029_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.77		
	26 Oct 2023	0445_MW029_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.63		
MW034	28 Nov 2017	0445E_MW34_S_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.08		
	16 Nov 2021	0445_MW034_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.67		
	03 May 2022	0445_MW034_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.25		
		0445_QC106_220503	Field_D	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.99		
	05 May 2022	0445_QC206_220505	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	4.09	2.19	3.39
	13 Oct 2022	0445_MW034_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.38		
	05 May 2023	0445_MW034_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.76		
		0445_QC109_230505	Field_D	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.70		
		0445_QC209_230505	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.87	1.13	1.62
	26 Oct 2023	0445_MW034_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.58		
MW035	28 Nov 2017	0445E_MW35_S_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	20.4		
	16 Nov 2021	0445_MW035_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3		
	03 May 2022	0445_MW035_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	18.7		
	13 Oct 2022	0445_MW035_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	21.5		
	05 May 2023	0445_MW035_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.21	<0.05	<0.05	21.1		
		0445_QC106_230505	Field_D	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.25	<0.05	<0.05	21.2		
		0445_QC206_230505	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.21	<0.01	<0.01	22.75	8.95	16.55
	26 Oct 2023	0445_MW035_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.20	<0.05	<0.05	22.2		
MW042	28 Nov 2017	0445E_MW42_D_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	25.3		
	11 Nov 2021	QC204_211111	Interlab_D	841785	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.09	<0.01	<0.01	18.21	4.95	11.95
	12 Nov 2021	0445_MW042_211111	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	14.2		
		0445_QC104_211111	Field_D	EM2122518	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.05	<0.05	<0.05	13.6		
	03 May 2022	0445_MW042_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	23.1		
	13 Oct 2022	0445_MW042_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.20	<0.05	<0.05	22.3		
	05 May 2023	0445_MW042_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.22	<0.05	<0.05	19.5		
	26 Oct 2023	0445_MW042_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.24	<0.05	<0.05	20.8		
		0445_QC108_20231026	Field_D	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.21	<0.05	<0.05	19.1		

					N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																	
PFAS NEMP 2.0 Table 1 Health Recreational Water																	
PFAS NEMP 2.0 Table 5 Freshwater 95%																	
PFAS NEMP 2.0 Table 5 Freshwater 99%																	
Location Code	Date	Field ID	Sample Type	Lab Report Number													
		0445_QC208_20231026	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.18	<0.01	<0.01	18.82	7.85	13.65
MW043	28 Nov 2017	0445E_MW43_I_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.46	<0.05	<0.05	48.1		
	16 Nov 2021	0445_MW043_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	21.9		
	03 May 2022	0445_MW043_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.24	<0.05	<0.05	24.7		
	13 Oct 2022	0445_MW043_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	22.4		
	05 May 2023	0445_MW043_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.22	<0.05	<0.05	14.7		
	26 Oct 2023	0445_MW043_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.19	<0.05	<0.05	15.5		
MW046_D	28 Nov 2017	0445E_MW46_D_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	6.08		
	03 May 2022	0445_MW046D_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	6.70		
	13 Oct 2022	0445_MW046_D_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.45		
	05 May 2023	0445_MW046_D_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.44		
	26 Oct 2023	0445_MW046_D_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.11		
MW046_I	28 Nov 2017	0445E_MW47_I_171128	Normal	ES1730397	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	6.04		
	04 May 2022	0445_MW046I_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.58		
	13 Oct 2022	0445_MW046_I_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.66		
	05 May 2023	0445_MW046_I_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.27		
	26 Oct 2023	0445_MW046I_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.96		
MW051	04 Dec 2017	0445S_MW04_S_171204	Normal	ES1731167	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05		
	10 Nov 2021	QC200_211110	Interlab_D	841785	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.01
	11 Nov 2021	0445_MW051_211110	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Nov 2021	0445_QC100_211110	Field_D	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Oct 2022	0445_MW051_20221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
		0445_QC104_20221012	Field_D	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
		0445_QC204_221012	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.02	0.02
	25 Oct 2023	0445_MW051_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16		
	28 Nov 2023	0445_MW051_231128	Normal	EM2321318	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.25		
MW052	01 Jun 2012	0445E_MW06-A_120601	Normal	ES1213811								<0.1					
		0445E_QC103_120601	Field_D	ES1213811								<0.1					
	07 Mar 2017	0445_MW06_070307	Normal	163195								<0.01	<0.01				
	11 Dec 2017	0445E_MW06A_S_171211	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	41.4		
	16 Nov 2021	0445_MW052_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.7		
	05 May 2022	0445_MW052_220505	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	21.4		
	14 Oct 2022	0445_MW052_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	17.4		
	05 May 2023	0445_MW052_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	29.1		
	25 Oct 2023	0445_MW052_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	261		
	27 Nov 2023	0445_MW052_231127	Normal	EM2321318	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	23.6		
	28 Nov 2023	0445_MW052_231128	Normal	EM2321318	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	28.4		
MW056	29 Nov 2017	0445S_BH111_P_171129	Normal	ES1730510	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.87		
	11 Nov 2021	0445_MW056_211111	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.32		
	12 Oct 2022	0445_MW056_221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.48		
		0445_QC105_20221012	Field_D	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.70		
		0445_QC205_221012	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.95	0.94	1.51
MW304	06 Dec 2017	0445s_MW304_S_171206	Normal	ES1731108	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	10 Nov 2021	0445_MW304_211110	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	04 May 2022	0445_MW304_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
		0445_QC107_220504	Field_D	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12		
		0445_QC207_220504	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.16	0.1	0.16
	10 Oct 2022	0445_MW304_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	0.94		
	04 May 2023	0445_MW304_230504	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	0.46		
		0445_QC105_230504	Field_D	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.28		
		0445_QC205_230504	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.44	0.17	0.34
	26 Oct 2023	0445_MW304_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
MW307	06 Dec 2017	0445s_MW307_S_171206	Normal	ES1731108	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.45		
		0445s_QC110_171206	Field_D	ES1731108	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41		
	11 Nov 2021	0445_MW307_211110	Normal	EM2122518	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	0.90	65.4	<0.05	<0.05	928		
	22 Dec 2021	0445_MW307_211222	Normal	EM2125903	<0.14	<0.14	<0.14	<0.14	<0.05	<0.05	0.90	100	<0.05	<0.05	1,270		
		0445_QC101_211222	Field_D	EM2125903	<0.13	<0.13	<0.13	<0.13	<0.05	<0.05	0.91	102	<0.05	<0.05	1,240		
		0445_QC201_211222	Interlab_D	852797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.33	26	<0.01	<0.01	774.38	74.9	464.9
	04 May 2022	0445_MW307_220504	Normal	EM2208381	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	1.10	116	<0.05	<0.05	1,440		
	10 Oct 2022	0445_MW307_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	0.11	11.6	<0.05	<0.05	145		
	04 May 2023	0445_MW307_230504	Normal	EM2308015	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	0.58	82.8	<0.05	<0.05	954		
	26 Oct 2023	0445_MW307_20231026	Normal	EM2319356	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	0.90	103	<0.05	<0.05	1,180		
MW311	05 Dec 2017	0445S_MW311_S_171205	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09		
		0445S_QC108_171205	Field_D	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09		
	17 Nov 2021	0445_MW311_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	10 Oct 2022	0445_MW311_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		

					N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																	
PFAS NEMP 2.0 Table 1 Health Recreational Water																	
PFAS NEMP 2.0 Table 5 Freshwater 95%																	
PFAS NEMP 2.0 Table 5 Freshwater 99%																	
Location Code	Date	Field ID	Sample Type	Lab Report Number													
	27 Oct 2023	0445_MW311_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
MW312	06 Dec 2017	0445s_MW312_S_171206	Normal	ES1731108	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19		
	10 Nov 2021	0445_MW312_211110	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22		
	04 May 2022	0445_MW312_220504	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
	10 Oct 2022	0445_MW312_221010	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	04 May 2023	0445_MW312_230504	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.49		
	26 Oct 2023	0445_MW312_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.48		
MW313	09 Dec 2017	0445_MW313_D_171209	Normal	ES1731468	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0052		
	11 Nov 2021	0445_MW313_211111	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	15 Oct 2022	0445_MW313_221015	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	27 Oct 2023	0445_MW313_20231027	Normal	EM2319354	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
MW315	06 Dec 2017	0445s_MW315_D_171206	Normal	ES1731108	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	17 Nov 2021	0445_MW315_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
MW317	06 Dec 2017	0445s_MW317_D_171206	Normal	ES1731108	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
MW319	04 Dec 2017	0445S_MW319_D_171204	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38		
	10 Nov 2021	0445_MW319_211110	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37		
		QC201_211110	Interlab_D	841785	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.55	0.39	0.51
	12 Nov 2021	0445_QC101_211110	Field_D	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.39		
	12 Oct 2022	0445_MW319_221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26		
		0445_QC203_221012	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.28	0.22	0.28
	25 Oct 2023	0445_MW319_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22		
		0445_QC106_20231025	Field_D	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21		
		0445_QC206_20231025	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.17	0.14	0.17
MW321	05 Dec 2017	0445S_MW321_S_171205	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.45		
	10 Nov 2021	0445_MW321_211110	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.96		
	12 Oct 2022	0445_MW321_221210	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78		
		0445_QC102_20221012	Field_D	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.73		
		0445_QC202_221012	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.07	0.09
	25 Oct 2023	0445_MW321_20231025	Normal	EM2319356	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	1.72	1.85	<0.05	1,280		
	27 Nov 2023	0445_MW321_231127	Normal	EM2321318	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.14	0.62	<0.05	667		
	28 Nov 2023	0445_MW321_231128	Normal	EM2321318	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.68	1.46	<0.05	1,070		
		0445_QC101_231128	Field_D	EM2321318	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.06	0.59	<0.05	628		
		0445_QC201_231128	Interlab_D	1049115	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	1.0	0.33	<0.01	618.79	485.8	584.8
MW323	30 Nov 2017	0445S_MW323_S_171130	Normal	ES1730642	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
		0445S_QC104_S_171130	Field_D	ES1730642	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	05 Dec 2017	0445S_QC204_171130	Interlab_D	575864	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1		
	10 Nov 2021	0445_MW323_211110	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Oct 2022	0445_MW323_221210	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	25 Oct 2023	0445_MW323_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
MW326	04 Dec 2017	0445S_MW326_S_171204	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03		
	10 Nov 2021	0445_MW326_211110	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.01		
MW329	04 Dec 2017	0445S_MW329_S_171204	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	10 Nov 2021	0445_MW329_21110	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
		0445_QC102_211110	Field_D	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
		QC202_211110	Interlab_D	841785	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.28	0.03	0.19
	12 Oct 2022	0445_MW329_221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	0.73		
	25 Oct 2023	0445_MW329_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.65		
MW342	07 Dec 2017	0445N_MW342_S_171207	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20		
	11 Nov 2021	0445_MW342_211111	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.8		
	22 Dec 2021	0445_MW342_211222	Normal	EM2125903	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.0		
		0445_QC100_211222	Field_D	EM2125903	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.2		
		0445_QC200_211222	Interlab_D	852797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	17.88	6.12	12.92
	06 May 2022	0445_MW342_220506	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.3		
		0445_QC111_220506	Field_D	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.3		
		0445_QC211_220506	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	15.27	5.11	11.51
	15 Oct 2022	0445_MW342_221015	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.77		
	04 May 2023	0445_MW342_230504	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.23		
	26 Oct 2023	0445_MW342_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.92		
MW345	07 Dec 2017	0445N_MW345_S_171207	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33		
	17 Nov 2021	0445_MW345_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36		
	06 May 2022	0445_MW345_220506	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31		
	12 Oct 2022	0445_MW345_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41		
	05 May 2023	0445_MW345_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41		
	26 Oct 2023	0445_MW345_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.44		
MW346	07 Dec 2017	0445N_MW346_S_171207	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
		0445N_QC212_171207	Normal	577514	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1		

					N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																	
PFAS NEMP 2.0 Table 1 Health Recreational Water																	
PFAS NEMP 2.0 Table 5 Freshwater 95%																	
PFAS NEMP 2.0 Table 5 Freshwater 99%																	
Location Code	Date	Field ID	Sample Type	Lab Report Number													
	11 Dec 2017	0445N_QC112_171207	Field_D	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	16 Nov 2021	0445_MW346_211117	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	06 May 2022	0445_MW346_220506	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	12 Oct 2022	0445_MW346_221012	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17		
	04 May 2023	0445_MW346_230504	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
	26 Oct 2023	0445_MW346_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
MW350_D	10 Dec 2017	0445E_MW350_D_171210	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.79		
	11 Nov 2021	0445_MW350_D_211111	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77		
	03 May 2022	0445_MW350_D_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.75		
	14 Oct 2022	0445_MW350_D_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.86		
	05 May 2023	0445_MW350__D_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.93		
	25 Oct 2023	0445_MW350_D_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.93		
MW350_S	10 Dec 2017	0445E_MW350_S_171210	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.42	<0.05	<0.05	137		
	11 Nov 2021	0445_MW350_S_211111	Normal	EM2122518	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.37	<0.05	<0.05	70.1		
		0445_QC105_211111	Field_D	EM2122518	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.29	<0.05	<0.05	71.0		
		QC205_211111	Interlab_D	841785	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.43	<0.01	<0.01	95.78	21.8	71.8
	06 May 2022	0445_MW350_S_220506	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.22	<0.05	<0.05	63.0		
	14 Oct 2022	0445_MW350_S_221014	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.80	<0.05	<0.05	50.5		
	05 May 2023	0445_MW350_S_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.91	<0.05	<0.05	131		
	25 Oct 2023	0445_MW350_S_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	2.38	<0.05	<0.05	176		
MW351	11 Dec 2017	0445E_MW351_S_171211	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07		
	16 Nov 2021	0445_MW351_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	03 May 2022	0445_MW351_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
		0445_QC100_220503	Field_D	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
		0445_QC200_220503	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.01	0.02
	13 Oct 2022	0445_MW351_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
	05 May 2023	0445_MW351_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
		0445_QC107_230505	Field_D	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
		0445_QC207_230505	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.02	0.04
	25 Oct 2023	0445_MW351_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
MW352	11 Dec 2017	0445E_MW352_S_171211	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10		
	16 Nov 2021	0445_MW352_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
	03 May 2022	0445_MW352_220503	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
	13 Oct 2022	0445_MW352_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	05 May 2023	0445_MW352_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	25 Oct 2023	0445_MW352_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01		
MW353	11 Dec 2017	0445E_MW353_S_171211	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.3		
	12 Nov 2021	0445_MW353_211111	Normal	EM2122518	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.19		
	05 May 2022	0445_MW353_220505	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.69		
	13 Oct 2022	0445_MW353_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.35		
	05 May 2023	0445_MW353_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15.9		
	26 Oct 2023	0445_MW353_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	29.8		
MW354	11 Dec 2017	0445E_MW354_S_171211	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19		
		0445E_QC116_171211	Field_D	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.38		
	16 Nov 2021	0445_MW354_211116	Normal	EM2122998	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.50		
	05 May 2022	0445_MW354_220505	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
	13 Oct 2022	0445_MW354_221013	Normal	EM2220286	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	05 May 2023	0445_MW354_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14		
	26 Oct 2023	0445_MW354_20231026	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08		
		0445_QC109_20231026	Field_D	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09		
		0445_QC209_20231026	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.04	0.06
MW356	09 Dec 2017	0445_MW356_S_171209	Normal	ES1731468	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0019		
	12 Nov 2021	0445_MW356_211112	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	07 May 2022	0445_MW356_220505	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02		
	05 May 2023	0445_MW356_230505	Normal	EM2308009	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	25 Oct 2023	0445_MW356_20231025	Normal	EM2319354	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
MW357	09 Dec 2017	0445_MW357_S_171209	Normal	ES1731468	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.136		
		0445_QC114_171209	Field_D	ES1731468	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.127		
	12 Nov 2021	0445_MW357_211112	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07		
	06 May 2022	0445_MW357_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04		
	12 Oct 2022	0445_MW357_221012	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06		
	04 May 2023	0445_MW357_230504	Normal	EM2308009	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08		
	24 Oct 2023	0445_MW357_20231024	Normal	EM2319354	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05		
MW359	05 Dec 2017	0445S_MW359_D_171205	Normal	ES1731167	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03		
	28 Nov 2023	0445_MW359_231128	Normal	EM2321318	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26		
MW360	09 Dec 2017	0445_MW360_S_171209	Normal	ES1731468	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.263		

					N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																	
PFAS NEMP 2.0 Table 1 Health Recreational Water																	
PFAS NEMP 2.0 Table 5 Freshwater 95%																	
PFAS NEMP 2.0 Table 5 Freshwater 99%																	
Location Code	Date	Field ID	Sample Type	Lab Report Number													
	11 Nov 2021	0445_MW360_211111	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	06 May 2022	0445_MW360_220506	Normal	EM2208383	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11		
	15 Oct 2022	0445_MW360_221015	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17		
	04 May 2023	0445_MW360_230504	Normal	EM2308009	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14		
	25 Oct 2023	0445_MW360_20231025	Normal	EM2319354	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12		
MW361	09 Dec 2017	0445_MW361_S_171209	Normal	ES1731468	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.386		
		0445_QC115_171209	Field_D	ES1731468	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.360		
	11 Nov 2021	0445_MW361_211111	Normal	EM2122519	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22		
	07 May 2022	0445_MW361_220506	Normal	EM2208381	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24		
	15 Oct 2022	0445_MW361_221015	Normal	EM2220271	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11		
	04 May 2023	0445_MW361_230504	Normal	EM2308009	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14		
	25 Oct 2023	0445_MW361_20231025	Normal	EM2319354	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22		
MW403	10 Dec 2017	0445E_BH01_S_171210	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.01	0.05	<0.05	145		
	12 Nov 2021	0445_MW403_211111	Normal	EM2122518	<0.10	<0.10	<0.10	<0.10	<0.04	<0.04	<0.05	1.41	<0.05	<0.05	129		
	05 May 2022	0445_MW403_220505	Normal	EM2208381	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.95	<0.05	<0.05	137		
	14 Oct 2022	0445_MW403_221014	Normal	EM2220286	<0.08	<0.08	<0.08	<0.08	<0.03	<0.03	<0.05	0.50	0.05	<0.05	112		
	05 May 2023	0445_MW403_230505	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.53	<0.05	<0.05	116		
	26 Oct 2023	0445_MW403_2023102	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.68	<0.05	<0.05	150		
MW404	10 Dec 2017	0445E_BH02_S_171210	Normal	ES1731478	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.12	<0.05	<0.05	172		
	11 Nov 2021	0445_MW404_211111	Normal	EM2122518	<0.10	<0.10	<0.10	<0.10	<0.04	<0.04	<0.05	0.06	<0.05	<0.05	108		
		0445_QC103_211111	Field_D	EM2122518	<0.11	<0.11	<0.11	<0.11	<0.04	<0.04	<0.05	0.06	<0.05	<0.05	96.3		
		QC203_211111	Interlab_D	841785	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.08	<0.01	<0.01	110.86	50.4	87.4
	05 May 2022	0445_MW404_220505	Normal	EM2208381	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	146		
	14 Oct 2022	0445_MW404_221014	Normal	EM2220286	<0.08	<0.08	<0.08	<0.08	<0.03	<0.03	<0.05	0.07	<0.05	<0.05	223		
	05 May 2023	0445_MW404_230505	Normal	EM2308015	<0.09	<0.09	<0.09	<0.09	<0.03	<0.03	<0.05	0.12	<0.05	<0.05	302		
	26 Oct 2023	0445_MW404_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.10	<0.05	<0.05	300		
MW416	06 May 2023	0445_MW416_230506	Normal	EM2308015	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
	25 Oct 2023	0445_MW416_20231025	Normal	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
		0445_QC105_20231025	Field_D	EM2319356	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01		
		0445_QC205_20231024	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.01
OTH019	31 Oct 2018	0445_OTH019_181031	Normal	ES1832670	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.208		
		0445_QC120_181031	Field_D	ES1832670	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.217		
		0445_QC220_181031	Interlab_D	625560	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.194	0.041	0.161
	15 Nov 2021	0445_OTH019_211115	Normal	EM2122969	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18		
	05 May 2022	0445_OTH019_220505	Normal	EM2208348	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15		
	10 Nov 2022	0445_OTH019_221110	Normal	EM2222364	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13		
		0445_QC110_221110	Field_D	EM2222364	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13		
		0445_QC210_221110	Interlab_D	941104	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.15	0.05	0.15
	02 May 2023	0445_OTH019_230502	Normal	EM2308003	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16		
	23 Oct 2023	0445_OTH019_20231023	Normal	EM2319355	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22		

Notes

Denotes first time detection above LOR in latest monitoring round

Denotes new exceedance of lowest adopted screening criteria in latest monitoring round

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorononanesulfonic acid (PFNS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.01	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																	
Location Code	Date	Field ID	Sample Type	Lab Report No.																			
SW307	17 Nov 2021	0445_SW307_211117	Normal	EM2122998	0.07	<0.01	**0.17**	-	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW307_221013	Normal	EM2220286	0.14	<0.01	**0.25**	-	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW310	17 Nov 2021	0445_SW310_211117	Normal	EM2122998	0.11	<0.01	**0.32**	-	<0.02	<0.02	0.21	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW310_221010	Normal	EM2220286	0.18	<0.01	**0.46**	-	0.04	0.03	0.28	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_SW310_230503	Normal	EM2308015	0.09	<0.01	**0.12**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW311	17 Nov 2021	0445_SW311_211117	Normal	EM2122998	1.75	0.03	***2.16***	-	0.03	0.02	0.41	0.03	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_QC100_20221010	Field_D	EM2220286	0.97	0.07	**1.89**	-	0.05	0.04	0.92	0.03	<0.02	0.2	0.24	0.29	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC200_221010	Interlab_D	932350	1.2	0.10	***2.4***	<0.01	0.07	0.06	1.2	0.04	<0.01	0.23	0.34	0.36	0.06	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW311_221010	Normal	EM2220286	0.74	0.07	**1.56**	-	0.04	0.04	0.82	0.03	<0.02	<0.1	0.22	0.26	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW311_230506	Normal	EM2308015	0.18	<0.01	**0.20**	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW313	17 Nov 2021	0445_QC111_211117	Field_D	EM2122998	3.85	0.30	***5.13***	-	0.10	0.07	1.28	0.06	<0.02	0.1	0.33	0.48	0.11	0.19	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC211_211117	Interlab_D	842787	4.5	0.35	***6.1***	0.02	0.08	0.08	1.6	0.08	<0.01	0.23	0.32	0.53	0.12	0.18	0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW313_211117	Normal	EM2122998	3.13	0.30	***4.43***	-	0.10	0.06	1.30	0.07	<0.02	0.1	0.31	0.44	0.11	0.18	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW313_221010	Normal	EM2220286	2.91	0.10	***3.97***	-	0.10	0.08	1.06	0.04	<0.02	0.1	0.37	0.44	0.05	0.08	<0.02	<0.02	<0.02	<0.02	<0.05
	01 May 2023	0445_SW313_230501	Normal	EM2308015	1.90	0.14	***3.33***	-	0.14	0.12	1.43	0.03	<0.02	0.1	0.41	0.59	0.10	0.08	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW313_20231023	Normal	EM2319356	3.14	0.19	***5.53***	-	0.21	0.17	2.39	0.07	<0.02	0.3	0.79	1.10	0.14	0.11	<0.02	<0.02	<0.02	<0.02	<0.05
SW316	17 Oct 2017	0445S_SW316_0.1_171017	Normal	ES1726190	0.722	0.0140	**1.11**	-	0.0242	0.0306	0.388	0.0232	0.0020	<0.002	0.0080	0.0418	0.0062	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	17 Nov 2021	0445_SW316_211117	Normal	EM2122998	0.52	0.02	**1.02**	-	0.04	0.03	0.50	0.02	<0.02	<0.1	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	16 May 2022	0445S_SW316_220516	Normal	EM2209833	0.14	<0.01	**0.23**	-	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW316_221010	Normal	EM2220286	0.91	0.03	**1.37**	-	0.03	0.02	0.46	0.03	<0.02	<0.1	0.04	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_QC103_230503	Field_D	EM2308015	0.11	<0.01	**0.19**	-	0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC203_230503	Interlab_D	987797	0.14	<0.01	**0.21**	-	0.02	<0.01	0.07	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW316_230503	Normal	EM2308015	0.11	<0.01	**0.18**	-	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW321	17 Nov 2021	0445_QC112_211117	Field_D	EM2122998	3.88	0.08	***6.24***	-	0.18	0.17	2.36	0.10	<0.02	<0.1	0.05	0.36	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC212_211117	Interlab_D	842787	7.5	0.11	***10.3***	<0.01	0.18	0.26	2.8	0.13	<0.01	0.06	0.06	0.45	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW321_211117	Normal	EM2122998	3.48	0.09	***5.80***	-	0.16	0.16	2.32	0.10	<0.02	<0.1	0.06	0.35	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW321_220504	Normal	EM2208381	6.13	0.05	***7.09***	-	0.05	0.05	0.96	0.10	<0.02	<0.1	0.02	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW321_221010	Normal	EM2220286	0.96	<0.01	**1.12**	-	<0.02	<0.02	0.16	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	01 May 2023	0445_QC100_230501	Field_D	EM2308015	4.28	0.03	***4.97***	-	0.04	0.05	0.69	0.05	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC200_230501	Interlab_D	987797	4.7	0.03	***5.32***	-	0.04	0.04	0.62	0.07	<0.01	<0.05	<0.01	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW321_230501	Normal	EM2308015	3.97	0.03	***4.67***	-	0.04	0.05	0.70	0.05	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	24 Oct 2023	0445_SW321_20231023	Normal	EM2319356	3.10	0.02	***3.51***	-	0.03	<0.02	0.41	0.03	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW322	17 Nov 2021	0445_SW322_211117	Normal	EM2122998	2.38	0.07	***4.48***	-	0.16	0.16	2.10	0.08	<0.02	<0.1	0.05	0.31	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW322_220504	Normal	EM2208381	6.97	0.06	***8.01***	-	0.04	0.06	1.04	0.11	<0.02	<0.1	0.02	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW322_221010	Normal	EM2220286	0.83	<0.01	**1.00**	-	<0.02	<0.02	0.17	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW322_230504	Normal	EM2308015	3.13	0.02	***3.81***	-	0.04	0.04	0.68	0.04	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW322_20231023	Normal	EM2319356	3.00	0.02	***3.37***	-	0.02	0.02	0.37	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW323	17 Oct 2017	0445S_SW323_0.2_171017	Normal	ES1726190	1.13	0.0304	**1.42**	-	0.0212	0.0278	0.287	0.0212	0.0044	<0.002	0.0240	0.0652	0.0210	0.0094	0.0032	<0.0020	<0.0020	<0.0020	<0.0050
	17 Nov 2021	0445_SW323_211117	Normal	EM2122998	0.66	0.03	**0.94**	-	0.02	<0.02	0.28	<0.02	<0.02	<0.1	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW323_220504	Normal	EM2208381	0.65	0.02	**0.85**	-	0.03	<0.02	0.20	<0.02	<0.02	<0.1	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW323_221010	Normal	EM2220286	0.56	0.03	**0.79**	-	0.04	<0.02	0.23	<0.02	<0.02	<0.1	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW323_230504	Normal	EM2308015	0.63	0.02	**0.86**	-	0.03	0.02	0.23	<0.02	<0.02	<0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_QC103_20231023	Field_D	EM2319356	1.08	0.04	**1.34**	-	<0.02	<0.02	0.26	<0.02	<0.02	<0.1	0.04	0.07	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC203_20231023	Interlab_D	1039507	0.88	0.03	**1.11**	-	0.02	0.02	0.23	0.01	<0.01	<0.05	0.03	0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW323_20231023	Normal	EM2319356	1.02	0.03	**1.29**	-	<0.02	0.02	0.27	<0.02	<0.02	<0.1	0.04	0.06	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW324	20 Oct 2017	0445S_SW324_0.1_171020	Normal	ES1726682	1.53	0.155	***2.03***	-	0.0759	0.130	0.496	0.0823	<0.0005	<0.002	0.114	0.139	0.0654	0.0372	0.0075	0.0022	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_QC110_211117	Field_D	EM2122998	1.61	0.08	***2.23***	-	0.06	0.04	0.62	0.03	<0.02	<0.1	0.10	0.15	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC210_211117	Interlab_D	842787	2.6	0.11	***3.6***	0.02	0.05	0.06	1.0	0.05	0.01	0.10	0.11	0.21	0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW324_211117	Normal	EM2122998	1.86	0.10	***2.61***	-	0.06	0.05	0.75	0.04	<0.02	<0.1	0.10	0.17	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW324_220504	Normal	EM2208381	0.96	0.03	**1.20**	-	<0.02	<0.02	0.24	<0.02	<0.02	<0.1	0.04	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Oct 2022	0445_SW324_221010	Normal	EM2220286	1.46	0.06	**1.96**	-	0.04	0.03	0.50	0.04	<0.02	<0.1	0.06	0.11	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	01 May 2023	0445_QC101_230501	Field_D	EM2308015	1.80	0.09	***2.44***	-	0.07	0.05	0.64	0.02	<0.02	<0.1	0.12	0.18	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC201_230501	Interlab_D	987797	2.1	0.08	***2.81***	-	0.05	0.05	0.71	0.03	<0.01	0.06	0.11	0.16	0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW324_230501	Normal	EM2308015	1.80	0.09	***2.46***	-	0.07	0.06	0.66	0.03	<0.02	<0.1	0.12	0.18	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	26 Oct 2023	0445_SW324_20231026	Normal	EM2319356	2.04	0.06	***2.34***	-	0.04	<0.02	0.30	0.02	<0.02	<0.1	0.07	0.10	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW326	17 Nov 2021	0445_SW326_211117	Normal	EM2122998	7.99	0.38	***10.1***	-	0.22	0.19	2.14	0.22	0.07	0.2	0.37	0.63	0.19	0.04	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW326_220504	Normal	EM2208381	0.60	0.01	**0.69**	-	<0.02	<0.02	0.09	<0.02	<0.02	<0.1	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW326_221014	Normal	EM2220286	0.48	0.02	**0.65**	-	<0.02	<0.02	0.17	<0.02	<0.02	<0.1	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	01 May 2023	0445_SW326_230501	Normal	EM2308015	1.20	0.04	**1.37**	-	0.02	<0.02	0.17	<0.02	<0.02	<0.1	0.04	0.06	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_QC102_20231023	Field_D	EM2319356	2.68	0.12	***3.31***	-	0.04	0.04	0.63	0.06	<0.02	<0.1	0.11	0.18	0.06	0.03	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC202_20231023	Interlab_D	1039507	2.8	0.10	***3.39***	-	0.04	0.04	0.59	0.06	<0.01	0.06	0.11	0.14	0.05	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW326_20231023	Normal	EM2319356	2.62	0.11	***3.21***	-	0.05	0.04	0.59	0.06	<0.02	<0.1	0.10	0.17	0.06	0.03	<0.02	<0.02	<0.02	<0.02	<0.05
SW332	17 Oct 2017	0445S_SW332_0.05_171017	Normal	ES1726190	3.98	0.0496	***4.45***	-	0.149	0.0898	0.472	0.0436	0.0244	0.032	0.161	0.419	0.0302	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	17 Nov 2021	0445_SW332_211117	Normal	EM2122998	0.02	<0.01	0.04	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW332_221014	Normal	EM2220286	0.04	<0.01	**0.10**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_SW332_230503	Normal	EM2308015	0.01	<0.01	0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorononanesulfonic acid (PFNS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.01	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																	
Location Code	Date	Field ID	Sample Type	Lab Report No.																			
	28 Nov 2023	0445_QC100_231128	Field_D	EM2321318	3.22	0.05	***3.96***	-	0.27	0.12	0.74	0.04	<0.02	0.2	0.16	0.34	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC200_231128	Interlab_D	1049115	3.3	0.04	***3.96***	-	0.23	0.09	0.66	0.04	<0.01	0.19	0.14	0.27	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW332_231128	Normal	EM2321318	3.52	0.06	***4.30***	-	0.28	0.12	0.78	0.05	<0.02	0.2	0.16	0.33	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW333	17 Oct 2017	0445S_SW333_0.05_171017	Normal	ES1726190	0.444	0.0136	**0.577**	-	0.0148	0.0162	0.133	0.0090	<0.0020	<0.002	0.0042	0.0360	0.0060	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	17 Nov 2021	0445_SW333_211117	Normal	EM2122998	0.44	0.03	**0.84**	-	0.07	0.05	0.40	<0.02	<0.02	<0.1	0.07	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW333_220504	Normal	EM2208381	0.11	<0.01	**0.13**	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW333_221014	Normal	EM2220286	0.41	0.01	**0.58**	-	0.03	<0.02	0.17	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_SW333_230503	Normal	EM2308015	0.12	<0.01	**0.16**	-	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	28 Nov 2023	0445_SW333_231128	Normal	EM2321318	0.52	0.02	**0.69**	-	0.05	<0.02	0.17	<0.02	<0.02	<0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW336	18 Oct 2017	0445S_QC167_171018	Field_D	ES1726433	17.6	**0.850**	***19.8***	-	0.172	0.288	2.18	0.298	0.0452	0.044	0.352	1.93	0.324	0.347	0.137	0.0148	<0.0020	<0.0020	<0.0050
		0445S_QC267_171018	Interlab_D	569078	48	**1.2**	***50.7***	-	0.22	0.34	2.7	0.40	0.009	0.32	0.75	2.8	0.44	0.47	0.34	0.058	0.011	<0.001	<0.001
		0445S_SW336_0.1_171018	Normal	ES1726433	17.2	**0.899**	***19.6***	-	0.178	0.306	2.45	0.310	0.0396	0.055	0.446	2.30	0.382	0.348	0.136	0.0128	<0.0020	<0.0020	<0.0050
	15 Nov 2021	0445_SW336_211115	Normal	EM2122998	7.29	0.20	***7.71***	-	0.06	0.05	0.42	0.05	0.19	<0.1	0.10	0.26	0.10	0.15	0.16	0.10	0.02	<0.02	<0.05
	04 May 2022	0445_SW336_220504	Normal	EM2208381	7.64	0.35	***8.18***	-	0.14	0.11	0.54	0.04	0.96	<0.2	0.44	0.95	0.25	0.16	0.14	0.23	0.24	0.08	<0.09
	14 Oct 2022	0445_QC106_20221014	Field_D	EM2220286	4.70	0.17	***5.21***	-	0.05	0.05	0.51	0.08	0.07	<0.1	0.09	0.21	0.08	0.06	0.07	0.03	<0.02	<0.02	<0.05
		0445_QC206_221014	Interlab_D	932350	6.8	0.25	***7.6***	0.13	0.07	0.07	0.80	0.15	0.08	0.06	0.14	0.30	0.11	0.07	0.09	0.03	<0.01	<0.01	<0.01
		0445_SW336_221014	Normal	EM2220286	5.98	0.19	***6.63***	-	0.05	0.07	0.65	0.10	0.09	<0.1	0.10	0.23	0.08	0.06	0.08	0.04	<0.02	<0.02	<0.05
	04 May 2023	0445_SW336_230504	Normal	EM2308015	4.78	**0.57**	***5.93***	-	0.10	0.19	1.15	0.07	0.10	0.2	0.35	0.93	0.31	0.21	0.11	0.05	0.02	<0.02	<0.05
	27 Oct 2023	0445_SW336_20231027	Normal	EM2319356	13.8	**1.17**	***15.9***	-	0.22	0.23	2.08	0.20	0.44	0.3	0.71	1.77	0.55	0.42	0.28	0.13	0.07	<0.02	<0.05
SW338	18 Oct 2017	0445S_SW338_0.2_171018	Normal	ES1726433	3.94	0.224	***5.28***	-	0.202	0.210	1.34	0.111	0.0042	0.024	0.179	0.806	0.0998	0.0276	0.0048	<0.0020	<0.0020	<0.0020	<0.0050
	10 Nov 2021	0445_SW338_211109	Normal	EM2122518	1.06	0.05	**1.31**	-	0.09	0.03	0.25	<0.02	<0.02	<0.1	0.04	0.16	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW338_220504	Normal	EM2208381	0.76	0.04	**1.00**	-	0.03	0.03	0.24	<0.02	<0.02	<0.1	0.04	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_QC207_221014	Interlab_D	932350	0.81	0.04	**1.03**	<0.01	0.03	0.03	0.22	0.01	<0.01	<0.05	0.04	0.12	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW338_221014	Normal	EM2220286	0.53	0.03	**0.70**	-	0.03	0.02	0.17	<0.02	<0.02	<0.1	0.03	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_QC102_230502	Field_D	EM2308015	0.55	0.03	**0.75**	-	0.03	0.03	0.20	<0.02	<0.02	<0.1	0.03	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC202_230502	Interlab_D	987797	0.72	0.04	**0.91**	-	0.03	0.03	0.19	0.01	<0.01	<0.05	0.03	0.10	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW338_230502	Normal	EM2308015	0.53	0.03	**0.71**	-	0.03	0.02	0.18	<0.02	<0.02	<0.1	0.03	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW338_20231025	Normal	EM2319356	0.98	0.04	**1.20**	-	0.04	0.03	0.22	<0.02	<0.02	<0.1	0.05	0.13	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW340	18 Oct 2017	0445S_SW340_0.03_171018	Normal	ES1726433	5.59	0.333	***6.80***	-	0.134	0.158	1.21	0.0960	0.0332	0.039	0.258	0.488	0.236	0.0956	0.0496	0.0144	0.0024	<0.0020	<0.0050
	10 Nov 2021	0445_SW340_211109	Normal	EM2122518	4.20	0.15	***5.86***	-	0.26	0.21	1.66	0.11	<0.02	0.2	0.28	0.44	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_QC108_20221014	Field_D	EM2220286	0.70	0.05	**0.91**	-	0.02	0.02	0.21	<0.02	<0.02	<0.1	0.03	0.06	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC208_221014	Interlab_D	932350	1.3	0.06	**1.59**	<0.01	0.03	0.03	0.29	0.02	<0.01	<0.05	0.05	0.09	0.04	0.03	0.02	<0.01	<0.01	<0.01	<0.01
		0445_SW340_221014	Normal	EM2220286	0.76	0.05	**0.98**	-	0.02	0.02	0.22	<0.02	<0.02	<0.1	0.03	0.07	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW340_230502	Normal	EM2308015	1.20	0.09	**1.50**	-	<0.02	0.03	0.30	0.02	<0.02	<0.1	0.03	0.08	0.07	0.03	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW340_20231025	Normal	EM2319356	2.01	0.16	***2.49***	-	0.04	0.04	0.48	0.02	<0.02	<0.1	0.14	0.18	0.12	0.06	0.04	<0.02	<0.02	<0.02	<0.05
SW346	12 Oct 2017	0445S_SW346_0.2_171013	Normal	ES1725991	1.42	0.0634	**1.95**	-	0.0841	0.0844	0.526	0.0294	<0.0005	<0.002	0.110	0.150	0.0496	0.0206	0.0068	0.0014	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_SW346_211117	Normal	EM2122998	0.73	0.04	**0.94**	-	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.07	0.08	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW346_220504	Normal	EM2208381	0.69	0.04	**0.86**	-	0.04	<0.02	0.17	<0.02	<0.02	<0.1	0.04	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW346_221014	Normal	EM2220286	0.77	0.04	**1.07**	-	0.05	0.04	0.30	0.02	<0.02	<0.1	0.05	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW346_230505	Normal	EM2308015	0.67	0.03	**0.83**	-	0.03	0.02	0.16	<0.02	<0.02	<0.1	0.05	0.06	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW346_20231025	Normal	EM2319356	1.14	0.06	**1.50**	-	0.08	0.04	0.36	0.02	<0.02	<0.1	0.09	0.11	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW349	12 Oct 2017	0445S_QC159_171012	Field_D	ES1725991	0.854	0.0616	**1.33**	-	0.112	0.0908	0.479	0.0227	<0.0005	<0.002	0.124	0.166	0.0475	0.0164	0.0033	0.0009	<0.0005	<0.0005	<0.0005
	13 Oct 2017	0445S_SW349_0.5_171013	Normal	ES1725991	0.950	0.0476	**1.51**	-	0.104	0.0845	0.560	0.0216	<0.0005	<0.002	0.112	0.150	0.0399	0.0120	0.0026	0.0007	<0.0005	<0.0005	<0.0005
	15 Nov 2021	0445_QC206_211115	Interlab_D	842787	0.84	0.05	**1.06**	<0.01	0.04	0.03	0.22	0.01	<0.01	0.08	0.07	0.10	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	16 Nov 2021	0445_QC106_211115	Field_D	EM2122998	0.55	0.04	**0.73**	-	0.05	0.02	0.18	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_SW349_211115	Normal	EM2122998	0.61	0.04	**0.82**	-	0.04	0.03	0.21	<0.02	<0.02	<0.1	0.06	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW349_220504	Normal	EM2208381	0.48	0.02	**0.61**	-	0.03	<0.02	0.13	<0.02	<0.02	<0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW349_221014	Normal	EM2220286	0.47	0.03	**0.63**	-	0.03	0.02	0.16	<0.02	<0.02	<0.1	0.04	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW349_230502	Normal	EM2308015	0.46	0.02	**0.59**	-	0.03	<0.02	0.13	<0.02	<0.02	<0.1	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_QC100_20231023	Field_D	EM2319356	0.64	0.04	**0.85**	-	0.04	0.02	0.21	<0.02	<0.02	<0.1	0.06	0.08	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC200_20231023	Interlab_D	1039507	0.63	0.03	**0.79**	-	0.03	0.02	0.16	<0.01	<0.01	<0.05	0.04	0.06	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW349_20231023	Normal	EM2319356	0.67	0.04	**0.86**	-	0.03	0.03	0.19	<0.02	<0.02	<0.1	0.05	0.08	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW355	13 Oct 2017	0445S_SW355_0.5_171013	Normal	ES1725991	0.325	0.0133	**0.533**	-	0.143	0.0294	0.208	0.0065	<0.0005	<0.002	0.0279	0.0420	0.0111	0.0039	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_QC107_211117	Field_D	EM2122998	0.21	0.02	**0.29**	-	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	17 Nov 2021	0445_QC207_211117	Interlab_D	842787	0.29	0.02	**0.39**	<0.01	0.02	0.01	0.10	<0.01	<0.01	<0.05	0.03	0.04	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW355_211117	Normal	EM2122998	0.22	0.01	**0.30**	-	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_QC204_220504	Interlab_D	886780	0.27	<0.01	**0.32**	<0.01	0.01	<0.01	0.05	<0.01	<0.01	<0.05	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW355_220504	Normal	EM2208381	0.11	<0.01	**0.13**	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	07 May 2022	0445_QC104_220504	Field_D	EM2208381	0.19	0.01	**0.24**	-	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW355_221014	Normal	EM2220286	0.21	<0.01	**0.28**	-	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW355_230504	Normal	EM2308015	0.13	<0.01	**0.17**	-	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_QC101_20231023	Field_D	EM2319356	0.22	<0.01	**0.28**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC201_20231023	Interlab_D	1039507	0.16	<0.01	**0.21**	-	0.01	<0.01	0.05	<0.01	<0.01	<0.05	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW355_20231023	Normal	EM2319356	0.21	0.01	**0.27**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW370	23 Oct 2017	0445N_SW370_0.01_171023	Normal	ES1726698	0.166	0.0213	**0.326**	-	0.0255	0.0591	0.160	0.0121	<0.0005	0.018	0.0284	0.0307	0.0176	0.0069	0.0018	<0.0005	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_SW370_211117	Normal	EM2122998	0.22	0.01	**0.30**	-	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorononanesulfonic acid (PFNS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.01	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																	
Location Code	Date	Field ID	Sample Type	Lab Report No.																			
	06 May 2022	0445_SW370_220506	Normal	EM2208381	0.10	<0.01	**0.13**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_QC109_20221015	Field_D	EM2220286	0.14	<0.01	**0.20**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC209_221015	Interlab_D	932350	0.19	<0.01	**0.27**	<0.01	<0.01	<0.01	0.08	<0.01	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW370_221015	Normal	EM2220286	0.14	<0.01	**0.20**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW370_230504	Normal	EM2308015	0.09	<0.01	**0.12**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	26 Oct 2023	0445_SW370_20231026	Normal	EM2319356	0.11	<0.01	**0.16**	-	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW374	23 Oct 2017	0445N_SW374_0.1_171023	Normal	ES1726698	0.201	0.0228	**0.340**	-	0.0293	0.0378	0.139	0.0108	<0.0005	<0.002	0.0294	0.0324	0.0156	0.0057	0.0010	<0.0005	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_SW374_211117	Normal	EM2122998	0.13	<0.01	**0.17**	-	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW374_220506	Normal	EM2208381	0.05	<0.01	0.07	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW374_221014	Normal	EM2220286	0.08	<0.01	**0.12**	-	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW374_230505	Normal	EM2308015	0.08	<0.01	**0.10**	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	26 Oct 2023	0445_SW374_20231026	Normal	EM2319356	0.09	<0.01	**0.13**	-	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW375	23 Oct 2017	0445N_QC128_171023	Field_D	ES1726698	0.166	0.0190	**0.294**	-	0.0274	0.0267	0.128	0.0089	<0.0005	0.019	0.0232	0.0267	0.0156	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445N_QC228_171023	Interlab_D	569535	0.19	0.015	**0.29**	-	0.021	0.013	0.10	0.003	<0.001	0.019	0.035	0.039	0.012	0.003	0.001	<0.001	<0.001	<0.001	<0.001
		0445N_SW375_0.1_171023	Normal	ES1726698	0.150	0.0197	**0.270**	-	0.0227	0.0245	0.120	0.0092	<0.0005	0.015	0.0253	0.0317	0.0162	0.0046	0.0012	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_QC105_180801	Field_D	ES1823003	0.0623	0.0075	**0.104**	-	0.0068	0.0038	0.0415	0.0019	<0.0005	<0.002	<0.0005	0.0089	0.0053	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC205_180801	Interlab_D	611290	0.070	0.006	**0.101**	-	0.004	0.003	0.031	0.002	<0.001	0.006	0.005	0.012	0.005	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		0445_SW375_0.2_180801	Normal	ES1823003	0.0644	0.0074	**0.106**	-	0.0046	0.0029	0.0419	0.0016	<0.0005	<0.002	0.0025	0.0101	0.0076	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	17 Nov 2021	0445_SW375_211117	Normal	EM2122998	0.09	<0.01	**0.15**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW375_220506	Normal	EM2208381	0.06	<0.01	**0.08**	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW375_221012	Normal	EM2220286	0.05	<0.01	**0.08**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW375_230505	Normal	EM2308015	0.05	<0.01	0.07	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	26 Oct 2023	0445_SW375_20231026	Normal	EM2319356	0.09	<0.01	**0.12**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW379	16 Nov 2021	0445_SW379_21116	Normal	EM2122998	0.41	0.02	**0.58**	-	0.15	0.04	0.17	<0.02	0.02	0.1	0.07	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW379_221014	Normal	EM2220286	0.12	<0.01	**0.15**	-	0.03	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW380	10 Nov 2021	0445_SW380_211108	Normal	EM2122518	0.34	<0.01	**0.43**	-	0.06	0.02	0.09	<0.02	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW380_221014	Normal	EM2220286	0.18	<0.01	**0.20**	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW380_230506	Normal	EM2308015	0.10	<0.01	**0.11**	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW382	24 Oct 2017	0445E_QC131_171024	Field_D	ES1726816	0.101	0.0039	**0.120**	-	0.0066	0.0043	0.0187	0.0026	<0.0005	<0.002	0.0064	0.0155	0.0028	0.0008	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
		0445E_SW382_0.1_171024	Normal	ES1726816	0.107	0.0042	**0.130**	-	0.0074	0.0046	0.0225	0.0026	<0.0005	<0.002	0.0061	0.0157	0.0028	0.0008	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_QC109_211116	Field_D	EM2122998	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC209_211116	Interlab_D	842787	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	17 Nov 2021	0445_SW382_211116	Normal	EM2122998	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW382_220503	Normal	EM2208381	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	13 Oct 2022	0445_SW382_221013	Normal	EM2220286	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW382_230505	Normal	EM2308015	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_QC104_20231025	Field_D	EM2319356	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC204_20231025	Interlab_D	1039507	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW382_20231025	Normal	EM2319356	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW387	25 Oct 2017	0445E_SW387_0.2_171025	Normal	ES1726955	0.0530	0.0038	**0.157**	-	0.0273	0.0157	0.104	0.0045	<0.0005	<0.002	0.0030	0.0074	0.0021	0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW387_211116	Normal	EM2122998	0.06	<0.01	**0.21**	-	0.03	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_QC101_220503	Field_D	EM2208381	0.04	<0.01	**0.12**	-	<0.02	<0.02	0.08	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC201_220503	Interlab_D	886780	0.04	<0.01	**0.1**	<0.01	0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW387_220503	Normal	EM2208381	0.05	<0.01	**0.10**	-	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW387_221012	Normal	EM2220286	0.13	<0.01	**0.26**	-	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW387_230506	Normal	EM2308015	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	27 Oct 2023	0445_SW387_20231027	Normal	EM2319355	0.14	<0.01	**0.29**	-	0.04	<0.02	0.15	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW388	25 Oct 2017	0445E_SW388_0.2_171025	Normal	ES1726955	0.175	0.0046	**0.343**	-	0.0326	0.0200	0.168	0.0054	<0.0020	<0.002	<0.0020	0.0102	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW388_211116	Normal	EM2122998	0.28	<0.01	**0.48**	-	0.04	<0.02	0.20	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	16 May 2022	0445S_SW388_220516	Normal	EM2209833	0.25	0.02	**0.84**	-	0.1	0.07	0.59	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW388_221210	Normal	EM2220286	0.07	<0.01	**0.12**	-	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW390	13 Oct 2017	0445_SW390_0.5_171013	Normal	ES1725997	0.0006	<0.0005	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	31 Jul 2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.0003	<0.0005	<0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW390_0.5_181126	Normal	ES1835585	0.0005	<0.0005	0.0010	-	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	09 Nov 2021	0445_SW390_211109	Normal	EM2122518	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW390_220505	Normal	EM2208383	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW390_221011	Normal	EM2220271	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW390_230504	Normal	EM2308009	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	27 Oct 2023	0445_SW390_20231027	Normal	EM2319354	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW393	16 Oct 2017	0445_SW393_0.1_171016	Normal	ES1726004	0.0009	<0.0005	0.0009	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW393_0.2_181127	Normal	ES1835585	0.0009	<0.0005	0.0009	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW393_211116	Normal	EM2122999	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW393_220506	Normal	EM2208383	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Nov 2022	0445_SW393_221110	Normal	EM2222367	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW393_230504	Normal	EM2308009	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorononanesulfonic acid (PFNS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.01	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																	
Location Code	Date	Field ID	Sample Type	Lab Report No.																			
	26 Oct 2023	0445_SW393_20231025	Normal	EM2319354	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW395	09 Oct 2017	0445_QC153_171009	Field_D	ES1725705	0.0737	0.0022	**0.196**	-	0.0274	0.0154	0.122	0.0025	<0.0005	<0.002	<0.0005	0.0067	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC253_171010	Interlab_D	567888	0.094	0.004	**0.214**	-	0.018	0.020	0.12	0.003	<0.001	0.005	0.002	0.006	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		0445_SW395_0.5_171010	Normal	ES1725705	0.0925	0.0022	**0.224**	-	0.0296	0.0164	0.132	0.0034	<0.0005	<0.002	<0.0005	0.0088	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW395_0.5_191103	Normal	ES1936497	0.0688	0.0036	**0.126**	-	0.0092	0.0072	0.0570	0.0038	<0.0020	<0.002	<0.0020	0.0052	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW395_211116	Normal	EM2122999	0.09	<0.01	**0.19**	-	0.03	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	09 May 2022	0445_SW395_220509	Normal	EM2208629	0.04	<0.01	**0.10**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	10 Nov 2022	0445_SW395_221110	Normal	EM2222367	0.18	<0.01	**0.38**	-	0.03	0.02	0.20	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW395_230506	Normal	EM2308009	0.03	<0.01	0.06	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	27 Oct 2023	0445_SW395_20231027	Normal	EM2319354	0.05	<0.01	**0.10**	-	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW396	10 Oct 2017	0445_SW396_0.5_171010	Normal	ES1725715	0.434	0.0250	**1.91**	-	0.214	0.160	1.48	0.0256	<0.0005	<0.002	<0.0005	0.189	0.0182	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW396_0.5_180802	Normal	ES1823005	0.596	0.0914	***2.24***	-	0.394	0.316	1.64	0.0643	<0.0005	<0.002	0.113	0.281	0.0901	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW396_0.5_191103	Normal	ES1936497	0.549	0.0356	**1.66**	-	0.153	0.157	1.11	0.0488	<0.0020	<0.002	<0.0020	0.129	0.0182	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW396_211116	Normal	EM2122968	0.44	0.04	**1.51**	-	0.16	0.11	1.07	0.03	<0.02	<0.1	0.04	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW396_220503	Normal	EM2208382	0.57	0.05	***2.22***	-	0.21	0.19	1.65	0.05	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW396_221012	Normal	EM2220270	0.42	0.02	**1.10**	-	0.09	0.08	0.68	0.02	<0.02	<0.1	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW396_230506	Normal	EM2308004	0.49	0.04	**1.63**	-	0.14	0.18	1.14	0.05	<0.02	<0.1	0.04	0.17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	27 Oct 2023	0445_SW396_20231027	Normal	EM2319357	0.67	0.05	**1.97**	-	0.17	0.14	1.30	0.04	<0.02	<0.1	0.06	0.17	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW397	10 Oct 2017	0445_SW397_0.5_171010	Normal	ES1725715	5.74	0.434	***12.8***	-	1.21	1.06	7.02	0.390	<0.0005	0.025	0.225	1.88	0.224	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_SW397_1.0_171010	Normal	ES1725715	5.38	0.433	***12.3***	-	1.17	1.06	6.96	0.382	<0.0005	0.018	0.231	1.76	0.239	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_SW397_1.3_171010	Normal	ES1725715	5.61	0.462	***12.7***	-	1.17	1.09	7.12	0.371	<0.0005	0.024	0.217	1.85	0.211	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW397_0.5_180802	Normal	ES1823005	2.86	0.361	***7.52***	-	0.608	0.821	4.66	0.307	<0.0005	0.054	0.191	0.932	0.157	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_QC125_181126	Field_D	ES1835587	3.22	0.336	***7.36***	-	0.696	0.544	4.14	0.263	<0.0005	0.051	0.222	1.05	0.191	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC225_181126	Interlab_D	630629	5.8	0.47	***11***	-	0.87	1.3	5.6	0.37	<0.001	0.21	0.33	1.3	0.30	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
		0445_SW397_0.5_181126	Normal	ES1835587	3.84	0.362	***8.90***	-	0.773	0.711	5.06	0.282	<0.0005	0.051	0.236	1.14	0.206	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_QC135_191103	Field_D	ES1936497	4.43	0.383	***9.50***	-	0.801	1.05	5.07	0.394	<0.0020	0.077	0.289	1.19	0.215	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
		0445_SW397_0.5_191103	Normal	ES1936497	4.27	0.348	***9.44***	-	0.738	0.980	5.17	0.364	<0.0020	0.079	0.259	1.08	0.191	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW397_211116	Normal	EM2122968	3.32	0.30	***6.64***	-	0.57	0.51	3.32	0.26	<0.02	0.2	0.23	0.72	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW397_220503	Normal	EM2208382	3.99	0.34	***8.31***	-	0.64	0.68	4.32	0.30	<0.02	0.1	0.27	0.87	0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW397_221012	Normal	EM2220270	3.23	0.24	***6.53***	-	0.50	0.51	3.30	0.24	<0.02	<0.1	0.18	0.75	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW397_230506	Normal	EM2308004	2.79	0.28	***6.20***	-	0.58	0.62	3.41	0.24	<0.02	0.1	0.20	0.87	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW397_20231025	Normal	EM2319357	3.09	0.26	***6.79***	-	0.52	0.54	3.70	0.24	<0.02	<0.1	0.21	0.84	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW398	12 Oct 2017	0445_SW398_0.5_171012	Normal	ES1725997	0.0009	<0.0005	0.0009	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW398_0.5_181126	Normal	ES1835585	0.0004	<0.0005	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW398_211116	Normal	EM2122999	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW398_220503	Normal	EM2208383	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW398_221012	Normal	EM2220270	0.04	<0.01	**0.08**	-	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW398_230506	Normal	EM2308009	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	27 Oct 2023	0445_SW398_20231027	Normal	EM2319354	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW400	10 Oct 2017	0445_SW400_0.3_171010	Normal	ES1725715	0.178	0.0225	**0.826**	-	0.164	0.103	0.648	0.0164	<0.0005	<0.002	0.0082	0.119	0.0150	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_QC106_180802	Field_D	ES1823005	0.0992	0.0103	**0.228**	-	0.0340	0.0310	0.129	0.0084	<0.0005	<0.002	<0.0005	0.0179	0.0063	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		0445_QC206_180802	Interlab_D	611294	0.15	0.012	**0.35**	-	0.027	0.034	0.20	0.012	<0.001	0.007	0.004	0.028	0.006	<0.001	0.001	0.002	<0.001	<0.001	<0.001
		0445_SW400_0.2_180802	Normal	ES1823005	0.113	0.0118	**0.283**	-	0.0237	0.0283	0.170	0.0097	<0.0005	<0.002	0.0063	0.0240	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW400_0.2_191103	Normal	ES1936497	0.110	0.0084	**0.246**	-	0.0232	0.0218	0.136	0.0066	<0.0020	<0.002	<0.0020	0.0172	0.0032	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW400_211116	Normal	EM2122968	0.70	0.06	**1.51**	-	0.26	0.13	0.81	0.06	<0.02	<0.1	0.05	0.14	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW400_220503	Normal	EM2208382	0.22	0.02	**0.55**	-	0.07	0.05	0.33	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW400_221012	Normal	EM2220270	0.25	0.02	**0.57**	-	0.06	0.05	0.32	0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW400_230506	Normal	EM2308004	0.14	0.01	**0.32**	-	0.02	0.03	0.18	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW400_20231025	Normal	EM2319357	0.57	0.06	**1.57**	-	0.17	0.14	1.00	0.05	<0.02	<0.1	0.06	0.20	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW401	10 Oct 2017	0445_SW401_0.4_171010	Normal	ES1725715	0.179	0.0229	**0.687**	-	0.143	0.0922	0.508	0.0138	<0.0005	<0.002	0.0087	0.118	0.0113	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW401_0.2_191103	Normal	ES1936497	0.0928	0.0074	**0.217**	-	0.0238	0.0202	0.124	0.0060	<0.0020	<0.002	<0.0020	0.0142	0.0024	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW401_211116	Normal	EM2122968	0.32	0.04	**0.85**	-	0.15	0.08	0.53	0.03	<0.02	<0.1	0.03	0.11	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW401_220503	Normal	EM2208382	0.18	0.02	**0.51**	-	0.07	0.06	0.33	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW401_221012	Normal	EM2220270	0.10	<0.01	**0.26**	-	0.05	0.02	0.16	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW401_230506	Normal	EM2308004	0.11	0.01	**0.33**	-	0.05	0.05	0.22	<0.02	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW401_20231025	Normal	EM2319357	0.40	0.04	**1.08**	-	0.13	0.10	0.68	0.03	<0.02	<0.1	0.04	0.13	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW403	12 Oct 2017	0445_SW403_0.5_171012	Normal	ES1725997	0.0532	0.0063	**0.224**	-	0.0389	0.0325	0.171	0.0019	<0.0005	<0.002	<0.0005	0.0279	0.0041	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW403_211112	Normal	EM2122519	0.26	0.02	**0.59**	-	0.09	0.07	0.33	<0.02	<0.02	<0.1	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW403_220505	Normal	EM2208383	0.20	0.02	**0.58**	-	0.11	0.08	0.38	<0.02	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW403_221015	Normal	EM2220271	0.02	<0.01	0.04	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW403_230505	Normal	EM2308009	0.12	<0.01	**0.25**	-	0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	26 Oct 2023	0445_SW403_20231025	Normal	EM2319354	0.37	0.04	**0.95**	-	0.12	0.12	0.58	0.03	<0.02	<0.1	0.03	0.14	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW404	11 Oct 2017	0445_SW404_0.5_171011	Normal	ES1725716	0.0006	<0.0005	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW404_0.52_181126	Normal	ES1835585	0.0025	<0.0005	0.0025	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorononanesulfonic acid (PFNS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.01	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																	
Location Code	Date	Field ID	Sample Type	Lab Report No.																			
	12 Nov 2021	0445_SW404_211112	Normal	EM2122519	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	17 Nov 2021	0445_SW404_211117	Normal	EM2122998	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW404_220505	Normal	EM2208383	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW404_221015	Normal	EM2220271	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW404_230504	Normal	EM2308009	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW404_20231023	Normal	EM2319354	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW405	12 Oct 2017	0445_SW405_0.2_171012	Normal	ES1725997	0.0481	0.0046	**0.230**	-	0.0386	0.0339	0.182	0.0016	<0.0005	<0.002	<0.0005	0.0214	0.0027	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW405_0.1_180802	Normal	ES1823003	0.0401	0.0021	**0.0997**	-	0.0069	0.0053	0.0596	0.0022	<0.0005	<0.002	<0.0005	0.0013	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW405_211112	Normal	EM2122519	0.16	0.02	**0.51**	-	0.08	0.07	0.35	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW405_220505	Normal	EM2208383	0.08	<0.01	**0.13**	-	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW405_221015	Normal	EM2220271	0.02	<0.01	0.04	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW405_230506	Normal	EM2308009	0.05	<0.01	**0.11**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW405_20231025	Normal	EM2319354	0.26	0.03	**0.66**	-	0.08	0.07	0.40	<0.02	<0.02	<0.1	<0.02	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW409	14 Feb 2018	0445_SW409_0.0_180214	Normal	ES1805190	0.0947	0.0062	**0.115**	-	0.0026	0.0020	0.0204	0.0016	<0.0005	<0.002	0.0034	0.0048	0.0017	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW409_211112	Normal	EM2122519	0.02	<0.01	0.02	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW409_220506	Normal	EM2208383	0.04	<0.01	0.05	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW409_221015	Normal	EM2220271	0.06	<0.01	**0.09**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW409_230504	Normal	EM2308009	0.04	<0.01	0.04	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	24 Oct 2023	0445_SW409_20231023	Normal	EM2319354	0.06	<0.01	**0.09**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW412	12 Oct 2017	0445_SW412_0.5_171012	Normal	ES1725997	0.0482	0.0037	**0.213**	-	0.0245	0.0201	0.165	0.0010	<0.0005	<0.002	<0.0005	0.0065	0.0025	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW412_0.1_180802	Normal	ES1823003	0.0384	0.0051	0.0674	-	0.0050	0.0022	0.0290	0.0011	<0.0005	<0.002	<0.0005	0.0064	0.0031	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_QC126_181126	Field_D	ES1835585	0.0406	0.0037	0.0588	-	0.0028	0.0020	0.0182	<0.0005	<0.0005	<0.002	0.0020	0.0064	0.0016	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
		0445_SW412_0.2_181126	Normal	ES1835585	0.0383	0.0036	0.0569	-	0.0026	0.0019	0.0186	<0.0005	<0.0005	<0.002	0.0019	0.0068	0.0014	0.0008	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW412_211112	Normal	EM2122519	0.04	<0.01	0.05	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW412_220506	Normal	EM2208383	0.04	<0.01	**0.11**	-	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	15 Oct 2022	0445_SW412_221015	Normal	EM2220271	0.02	<0.01	0.03	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2023	0445_SW412_230505	Normal	EM2308009	0.02	<0.01	0.02	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	26 Oct 2023	0445_SW412_20231026	Normal	EM2319354	0.03	<0.01	0.04	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW416	11 Oct 2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.0003	<0.0005	<0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.0003	<0.0005	<0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	26 Nov 2018	0445_SW416_0.5_181126	Normal	ES1835585	0.0005	<0.0005	0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12 Nov 2021	0445_SW416_211111	Normal	EM2122519	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_SW416_220505	Normal	EM2208383	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW416_221012	Normal	EM2220271	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW416_230504	Normal	EM2308009	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	24 Oct 2023	0445_SW416_20231024	Normal	EM2319354	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW424	10 Oct 2017	0445_QC213	Interlab_D	567942	3.3	0.13	***5.1***	-	0.16	0.22	1.8	0.10	<0.01	0.10	0.11	0.36	0.08	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
	11 Oct 2017	0445_QC113	Field_D	ES1725716	2.52	0.0623	***4.85***	-	0.131	0.126	2.33	0.0687	<0.0005	0.011	0.0752	0.435	0.0445	0.0115	0.0016	0.0006	<0.0005	<0.0005	<0.0005
		0445_SW424_0.1_171011	Normal	ES1725716	2.12	0.0607	***4.14***	-	0.136	0.133	2.02	0.0714	<0.0005	0.010	0.0731	0.371	0.0429	0.0109	0.0013	<0.0005	<0.0005	<0.0005	<0.0005
	13 Oct 2017	0445_SW424_0.1_171013	Normal	ES1725997	0.706	0.0247	**1.33**	-	0.0590	0.0626	0.622	0.0142	<0.0005	<0.002	0.0475	0.103	0.0219	0.0060	0.0011	<0.0005	<0.0005	<0.0005	<0.0005
	15 Nov 2021	0445_QC208_211115	Interlab_D	842787	1.1	0.04	**1.83**	<0.01	0.03	0.05	0.73	0.03	<0.01	0.06	0.04	0.10	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	16 Nov 2021	0445_SW424_211115	Normal	EM2122999	0.76	0.03	**1.16**	-	0.04	0.02	0.40	0.02	<0.02	<0.1	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	07 May 2022	0445_SW424_220504	Normal	EM2208383	0.80	0.02	**1.28**	-	0.03	0.04	0.48	0.03	<0.02	<0.1	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW424_221011	Normal	EM2220271	0.78	0.01	**0.97**	-	0.02	<0.02	0.19	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW424_230502	Normal	EM2308009	0.84	0.02	**1.30**	-	0.03	0.03	0.46	<0.02	<0.02	<0.1	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW424_20231023	Normal	EM2319354	1.14	0.04	**1.70**	-	0.04	0.03	0.56	0.03	<0.02	<0.1	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW427	16 Oct 2017	0445_SW427_0.0_171016	Normal	ES1726004	0.111	0.0030	**0.133**	-	0.0045	0.0026	0.0222	0.0018	<0.0005	<0.002	0.0021	0.0046	0.0016	0.0009	0.0008	<0.0005	<0.0005	<0.0005	<0.0005
	15 Nov 2021	0445_SW427_211115	Normal	EM2122999	0.19	<0.01	**0.25**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW427_220506	Normal	EM2208383	0.03	<0.01	0.03	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW427_221011	Normal	EM2220271	0.40	0.01	**0.53**	-	<0.02	<0.02	0.13	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW427_230504	Normal	EM2308009	0.37	0.01	**0.51**	-	<0.02	<0.02	0.14	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW427_20231023	Normal	EM2319354	0.11	<0.01	**0.14**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW430	16 Oct 2017	0445_SW430_0.1_171016	Normal	ES1726004	0.0465	0.0036	0.0618	-	0.0010	0.0025	0.0153	0.0008	<0.0005	<0.002	<0.0005	0.0042	0.0015	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
	02 Aug 2018	0445_SW430_0.1_180802	Normal	ES1823003	0.0199	0.0039	0.0364	-	<0.0005	0.0011	0.0165	0.0005	<0.0005	<0.002	<0.0005	0.0042	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW430_211115	Normal	EM2122999	0.10	<0.01	**0.16**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW430_220506	Normal	EM2208383	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW430_221011	Normal	EM2220271	0.13	<0.01	**0.17**	-	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW430_230504	Normal	EM2308009	0.13	<0.01	**0.19**	-	<0.02	<0.02	0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW430_20231023	Normal	EM2319354	0.06	<0.01	**0.08**	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW431	16 Oct 2017	0445_SW431_0.1_171016	Normal	ES1726004	0.0525	0.0032	**0.0732**	-	<0.0005	0.0026	0.0207	0.0010	<0.0005	<0.002	<0.0005	0.0044	0.0013	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW431_211116	Normal	EM2122999	0.07	<0.01	**0.10**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW431_220506	Normal	EM2208383	0.02	<0.01	0.02	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW431_221011	Normal	EM2220271	0.14	<0.01	**0.19**	-	<0.02	<0.02	0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW431_230502	Normal	EM2308009	0.03	<0.01	0.03	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW431_20231023	Normal	EM2319354	0.04	<0.01	0.05	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW432	16 Oct 2017	0445_SW432_0.1_171016	Normal	ES1726004	0.0545	0.0044	**0.0769**	-	<0.0005	0.0023	0.0224	0.0010	<0.0005	<0.002	<0.0005	0.0055	0.0019	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005

					Perfluorocarbons																	
					Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoate (PFOA)	Sum of PFHxS and PFOS	Perfluorononanesulfonic acid (PFNS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					µg/L	µg/L	µg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.0001	0.0005	0.0003	0.01	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2.0 Table 1 Health Drinking Water						**0.56**	**0.07**																
PFAS NEMP 2.0 Table 1 Health Recreational Water						***10***	***2***																
PFAS NEMP 2.0 Table 5 Freshwater 95%					0.13	220																	
PFAS NEMP 2.0 Table 5 Freshwater 99%					0.00023	19																	
Location Code	Date	Field ID	Sample Type	Lab Report No.																			
	16 Nov 2021	0445_SW432_211116	Normal	EM2122999	0.05	<0.01	**0.08**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW432_220506	Normal	EM2208383	0.02	<0.01	0.02	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW432_221011	Normal	EM2220271	0.06	<0.01	**0.09**	-	<0.02	<0.02	0.03	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW432_230504	Normal	EM2308009	0.04	<0.01	0.06	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW432_20231023	Normal	EM2319354	0.06	<0.01	**0.08**	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW434	09 Oct 2017	0445_SW434_0.5_171011	Normal	ES1725705	0.0038	<0.0005	0.0045	-	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	15 Nov 2021	0445_SW434_211115	Normal	EM2122999	0.05	<0.01	0.07	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2022	0445_SW434_220506	Normal	EM2208383	0.02	<0.01	0.02	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW434_221011	Normal	EM2220271	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW434_230502	Normal	EM2308009	0.03	<0.01	0.03	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW434_20231025	Normal	EM2319354	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW448	20 Oct 2017	0445S_SW448_0.1_171020	Normal	ES1726682	1.41	0.0428	***2.38***	-	0.108	0.0448	0.965	0.104	<0.0005	0.015	0.179	0.111	0.0549	0.0207	0.0026	0.0042	0.0005	0.0021	<0.0005
	16 Nov 2021	0445_SW448_211115	Normal	EM2122998	2.09	0.07	***3.23***	-	0.06	0.05	1.14	0.04	<0.02	<0.1	0.12	0.25	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	14 Oct 2022	0445_SW448_221014	Normal	EM2220286	0.31	<0.01	**0.43**	-	<0.02	<0.02	0.12	<0.02	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2023	0445_QC104_230503	Field_D	EM2308015	1.28	0.03	**1.88**	-	0.04	0.03	0.60	0.02	<0.02	<0.1	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC204_230503	Interlab_D	987797	1.5	0.03	***2.07***	-	0.03	0.03	0.57	0.02	<0.01	<0.05	0.04	0.08	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW448_230503	Normal	EM2308015	1.23	0.03	**1.81**	-	0.04	0.03	0.58	<0.02	<0.02	<0.1	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW462	23 Nov 2017	0445_SW462_0.1_171123	Normal	ES1729741	0.0617	0.0059	**0.117**	-	0.0122	0.0159	0.0552	0.0044	<0.0005	<0.002	<0.0005	0.0123	0.0031	0.0011	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
	01 Aug 2018	0445_SW462_0.2_180801	Normal	ES1823003	0.0265	0.0035	0.0481	-	<0.0005	0.0017	0.0216	0.0008	<0.0005	<0.002	<0.0005	0.0045	0.0016	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	11 Nov 2021	0445_SW462_211111	Normal	EM2122518	0.08	<0.01	**0.19**	-	0.03	0.02	0.11	<0.02	<0.02	<0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	05 May 2022	0445_QC205_220505	Interlab_D	886780	0.04	<0.01	0.06	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW462_220505	Normal	EM2208383	0.03	<0.01	0.05	-	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	07 May 2022	0445_QC105_220505	Field_D	EM2208383	0.02	<0.01	0.03	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_SW462_221011	Normal	EM2220271	<0.01	<0.01	0.01	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2023	0445_SW462_230504	Normal	EM2308009	0.04	<0.01	0.05	-	<0.02	<0.02	0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	24 Oct 2023	0445_SW462_20231024	Normal	EM2319354	0.16	0.02	**0.42**	-	0.05	0.05	0.26	<0.02	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW463	11 Dec 2017	0445_SW463_0.1_171211	Normal	ES1731468	0.540	0.119	**1.03**	-	0.0266	0.0392	0.490	0.0108	<0.0005	<0.002	0.0448	0.206	0.0173	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0060
	16 Nov 2021	0445_SW463_211115	Normal	EM2122999	1.36	0.04	***2.10***	-	0.05	0.03	0.74	0.04	<0.02	<0.1	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_SW463_220504	Normal	EM2208383	0.99	0.02	**1.41**	-	0.04	0.02	0.42	0.02	<0.02	<0.1	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	11 Oct 2022	0445_QC101_221011	Field_D	EM2220271	1.00	0.05	**1.49**	-	0.03	0.03	0.49	0.02	<0.02	<0.1	0.06	0.10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
		0445_QC201_221011	Interlab_D	932350	1.7	0.06	***2.35***	<0.01	0.04	0.03	0.65	0.04	<0.01	0.07	0.09	0.14	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		0445_SW463_221011	Normal	EM2220271	1.02	0.05	**1.51**	-	0.03	0.03	0.49	0.02	<0.02	<0.1	0.06	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	02 May 2023	0445_SW463_230502	Normal	EM2308009	0.30	<0.01	**0.37**	-	<0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	23 Oct 2023	0445_SW463_20231023	Normal	EM2319354	0.90	0.03	**1.35**	-	0.02	0.02	0.45	<0.02	<0.02	<0.1	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW470	02 Aug 2018	0445_SW470_0.5_180802	Normal	ES1823003	0.160	0.0048	**0.330**	-	0.0223	0.0153	0.170	0.0057	<0.0005	<0.002	<0.0005	0.0066	0.0028	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW470_0.5_191103	Normal	ES1936497	0.179	0.0052	**0.388**	-	0.0258	0.0264	0.209	0.0074	<0.0020	<0.002	<0.0020	0.0072	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW470_211116	Normal	EM2122999	0.06	<0.01	**0.13**	-	0.02	<0.02	0.07	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW470_220503	Normal	EM2208383	0.19	<0.01	**0.42**	-	0.03	0.03	0.23	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	04 May 2022	0445_QC203_220504	Interlab_D	886780	0.54	0.03	**0.67**	<0.01	0.03	0.02	0.13	<0.01	<0.01	<0.05	0.04	0.04	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	07 May 2022	0445_QC103_220504	Field_D	EM2208381	0.46	0.02	**0.61**	-	0.02	<0.02	0.15	<0.02	<0.02	<0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW470_221012	Normal	EM2220270	0.04	<0.01	**0.08**	-	<0.02	<0.02	0.04	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW470_230506	Normal	EM2308009	0.11	<0.01	**0.21**	-	<0.02	<0.02	0.10	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	27 Oct 2023	0445_SW470_20231027	Normal	EM2319354	0.08	<0.01	**0.19**	-	<0.02	<0.02	0.11	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW471	02 Aug 2018	0445_SW471_0.2_180802	Normal	ES1823005	0.257	0.0312	**1.14**	-	0.306	0.192	0.881	0.0351	<0.0005	<0.002	0.0536	0.138	0.0319	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	03 Nov 2019	0445_SW471_0.5_191103	Normal	ES1936497	0.690	0.0844	***2.55***	-	0.414	0.391	1.86	0.0810	<0.0020	<0.002	0.0800	0.316	0.0508	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050
	16 Nov 2021	0445_SW471_211116	Normal	EM2122968	0.81	0.06	**1.82**	-	0.23	0.15	1.01	0.07	<0.02	<0.1	0.06	0.17	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW471_220503	Normal	EM2208382	1.14	0.15	***3.44***	-	0.45	0.40	2.30	0.12	<0.02	<0.1	0.14	0.46	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW471_221012	Normal	EM2220270	0.64	0.04	**1.40**	-	0.12	0.11	0.76	0.04	<0.02	<0.1	0.04	0.12	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW471_230506	Normal	EM2308004	0.32	0.03	**0.80**	-	0.08	0.09	0.48	0.02	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW471_20231025	Normal	EM2319357	0.96	0.08	***2.34***	-	0.25	0.19	1.38	0.08	<0.02	<0.1	0.07	0.28	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
SW487	02 Aug 2018	0445_SW487_0.01_180802	Normal	ES1823005	6.26	0.383	***9.09***	-	0.541	0.536	2.83	0.350	<0.0005	0.041	0.191	0.671	0.179	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	16 Nov 2021	0445_SW487_211116	Normal	EM2122968	3.45	0.30	***6.82***	-	0.60	0.57	3.37	0.27	<0.02	0.2	0.21	0.69	0.18	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	03 May 2022	0445_SW487_220503	Normal	EM2208382	4.13	0.32	***7.71***	-	0.64	0.61	3.58	0.29	<0.02	0.1	0.25	0.86	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	12 Oct 2022	0445_SW487_221012	Normal	EM2220270	4.09	0.22	***7.21***	-	0.48	0.48	3.12	0.26	<0.02	<0.1	0.15	0.61	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	06 May 2023	0445_SW487_230506	Normal	EM2308004	2.84	0.28	***6.16***	-	0.57	0.61	3.32	0.25	<0.02	0.1	0.20	0.85	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
	25 Oct 2023	0445_SW487_20231025	Normal	EM2319357	2.90	0.26	***6.38***	-	0.47	0.51	3.48	0.24	<0.02	<0.1	0.21	0.82	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

					Perfluorocarbons													
					Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
Location Code	Date	Field ID	Sample Type	Lab Report No.														
SW307	17 Nov 2021	0445_SW307_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-	-
	14 Oct 2022	0445_SW307_221013	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.27	-	-
SW310	17 Nov 2021	0445_SW310_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.32	-	-
	10 Oct 2022	0445_SW310_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.58	-	-
	03 May 2023	0445_SW310_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-	-
SW311	17 Nov 2021	0445_SW311_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.37	-	-
	10 Oct 2022	0445_QC100_20221010	Field_D	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.85	-	-
		0445_QC200_221010	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	3.71	1.3	2.5
		0445_SW311_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.27	-	-
	06 May 2023	0445_SW311_230506	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	-	-
SW313	17 Nov 2021	0445_QC111_211117	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.87	-	-
		0445_QC211_211117	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	8.14	4.85	6.45
		0445_SW313_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.10	-	-
	10 Oct 2022	0445_SW313_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.33	-	-
	01 May 2023	0445_SW313_230501	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.04	-	-
	23 Oct 2023	0445_SW313_20231023	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.61	-	-
SW316	17 Oct 2017	0445S_SW316_0.1_171017	Normal	ES1726190	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	1.26	-	-
	17 Nov 2021	0445_SW316_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.24	-	-
	16 May 2022	0445S_SW316_220516	Normal	EM2209833	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	-	-
	10 Oct 2022	0445_SW316_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.60	-	-
	03 May 2023	0445_QC103_230503	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21	-	-
		0445_QC203_230503	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.23	0.14	0.21
		0445_SW316_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.18	-	-
SW321	17 Nov 2021	0445_QC112_211117	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.21	-	-
		0445_QC212_211117	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	11.64	7.61	10.41
		0445_SW321_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.75	-	-
	04 May 2022	0445_SW321_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.47	-	-
	10 Oct 2022	0445_SW321_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.12	-	-
	01 May 2023	0445_QC100_230501	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.22	-	-
		0445_QC200_230501	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	5.58	4.73	5.35
		0445_SW321_230501	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.92	-	-
	24 Oct 2023	0445_SW321_20231023	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.64	-	-
SW322	17 Nov 2021	0445_SW322_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.34	-	-
	04 May 2022	0445_SW322_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.42	-	-
	10 Oct 2022	0445_SW322_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.00	-	-
	04 May 2023	0445_SW322_230504	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.01	-	-
	23 Oct 2023	0445_SW322_20231023	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.48	-	-
SW323	17 Oct 2017	0445S_SW323_0.2_171017	Normal	ES1726190	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	0.005	<0.002	<0.002	1.65	-	-
	17 Nov 2021	0445_SW323_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	-	-
	04 May 2022	0445_SW323_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.97	-	-
	10 Oct 2022	0445_SW323_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.94	-	-
	04 May 2023	0445_SW323_230504	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.02	-	-
	23 Oct 2023	0445_QC103_20231023	Field_D	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.51	-	-
		0445_QC203_20231023	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.29	0.91	1.14
		0445_SW323_20231023	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.46	-	-
SW324	20 Oct 2017	0445S_SW324_0.1_171020	Normal	ES1726682	0.0039	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.015	0.003	<0.001	2.86	-	-
	17 Nov 2021	0445_QC110_211117	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.73	-	-
		0445_QC210_211117	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	4.43	2.71	3.71
		0445_SW324_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.20	-	-
	04 May 2022	0445_SW324_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.33	-	-
	10 Oct 2022	0445_SW324_221010	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.33	-	-
	01 May 2023	0445_QC101_230501	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.04	-	-
		0445_QC201_230501	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	3.44	2.18	2.89
		0445_SW324_230501	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.07	-	-
	26 Oct 2023	0445_SW324_20231026	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.66	-	-
SW326	17 Nov 2021	0445_SW326_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.49	0.11	<0.05	13.2	-	-
	04 May 2022	0445_SW326_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.76	-	-
	14 Oct 2022	0445_SW326_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.73	-	-
	01 May 2023	0445_SW326_230501	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.55	-	-
	23 Oct 2023	0445_QC102_20231023	Field_D	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	4.03	-	-
		0445_QC202_20231023	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.07	<0.01	<0.01	4.13	2.9	3.49
		0445_SW326_20231023	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	3.90	-	-
SW332	17 Oct 2017	0445S_SW332_0.05_171017	Normal	ES1726190	0.0164	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	5.47	-	-
	17 Nov 2021	0445_SW332_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-	-
	14 Oct 2022	0445_SW332_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	-	-
	03 May 2023	0445_SW332_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-	-

					Perfluorocarbons													
					Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-Octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane Sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane Sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
Location Code	Date	Field ID	Sample Type	Lab Report No.														
	28 Nov 2023	0445_QC100_231128	Field_D	EM2321318	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.16	-	-
		0445_QC200_231128	Interlab_D	1049115	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	5.14	3.34	4
		0445_SW332_231128	Normal	EM2321318	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.52	-	-
SW333	17 Oct 2017	0445S_SW333_0.05_171017	Normal	ES1726190	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.680	-	-
	17 Nov 2021	0445_SW333_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.19	-	-
	04 May 2022	0445_SW333_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-	-
	14 Oct 2022	0445_SW333_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.67	-	-
	03 May 2023	0445_SW333_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	-	-
	28 Nov 2023	0445_SW333_231128	Normal	EM2321318	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.85	-	-
SW336	18 Oct 2017	0445S_QC167_171018	Field_D	ES1726433	0.0132	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	0.006	0.930	1.30	0.020	26.8	-	-
		0445S_QC267_171018	Interlab_D	569078	0.042	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.92	1.9	0.018	60.943	-	-
		0445S_SW336_0.1_171018	Normal	ES1726433	0.0126	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	0.006	1.03	1.27	0.016	27.4	-	-
	15 Nov 2021	0445_SW336_211115	Normal	EM2122998	0.03	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.35	0.83	0.14	10.5	-	-
	04 May 2022	0445_SW336_220504	Normal	EM2208381	0.11	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	0.90	1.44	1.19	15.9	-	-
	14 Oct 2022	0445_QC106_20221014	Field_D	EM2220286	0.04	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.25	0.47	<0.05	6.93	-	-
		0445_QC206_221014	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.33	0.58	0.04	10.12	7.05	7.85
		0445_SW336_221014	Normal	EM2220286	0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.27	0.53	<0.05	8.57	-	-
	04 May 2023	0445_SW336_230504	Normal	EM2308015	0.03	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.28	0.77	0.16	11.4	-	-
	27 Oct 2023	0445_SW336_20231027	Normal	EM2319356	0.04	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.09	0.96	0.32	24.8	-	-
SW338	18 Oct 2017	0445S_SW338_0.2_171018	Normal	ES1726433	0.0046	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	7.18	-	-
	10 Nov 2021	0445_SW338_211109	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.70	-	-
	04 May 2022	0445_SW338_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.25	-	-
	14 Oct 2022	0445_QC207_221014	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.33	0.85	1.07
		0445_SW338_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	-	-
	02 May 2023	0445_QC102_230502	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.98	-	-
		0445_QC202_230502	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.17	0.76	0.95
		0445_SW338_230502	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.92	-	-
	25 Oct 2023	0445_SW338_20231025	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.51	-	-
SW340	18 Oct 2017	0445S_SW340_0.03_171018	Normal	ES1726433	0.0110	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	0.180	0.410	0.045	9.38	-	-
	10 Nov 2021	0445_SW340_211109	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.61	-	-
	14 Oct 2022	0445_QC108_20221014	Field_D	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.14	-	-
		0445_QC208_221014	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.05	0.03	<0.01	2.05	1.36	1.65
		0445_SW340_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.22	-	-
	02 May 2023	0445_SW340_230502	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.85	-	-
	25 Oct 2023	0445_SW340_20231025	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.29	-	-
SW346	12 Oct 2017	0445S_SW346_0.2_171013	Normal	ES1725991	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.052	0.037	0.001	2.64	-	-
	17 Nov 2021	0445_SW346_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.23	-	-
	04 May 2022	0445_SW346_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.05	-	-
	14 Oct 2022	0445_SW346_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.37	-	-
	05 May 2023	0445_SW346_230505	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.04	-	-
	25 Oct 2023	0445_SW346_20231025	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.96	-	-
SW349	12 Oct 2017	0445S_QC159_171012	Field_D	ES1725991	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.011	0.002	<0.001	1.99	-	-
	13 Oct 2017	0445S_SW349_0.5_171013	Normal	ES1725991	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.010	0.001	<0.001	2.10	-	-
	15 Nov 2021	0445_QC206_211115	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.51	0.89	1.11
	16 Nov 2021	0445_QC106_211115	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.00	-	-
		0445_SW349_211115	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	-	-
	04 May 2022	0445_SW349_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.74	-	-
	14 Oct 2022	0445_SW349_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.80	-	-
	02 May 2023	0445_SW349_230502	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.71	-	-
	23 Oct 2023	0445_QC100_20231023	Field_D	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.12	-	-
		0445_QC200_20231023	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1	0.66	0.82
		0445_SW349_20231023	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.12	-	-
SW355	13 Oct 2017	0445S_SW355_0.5_171013	Normal	ES1725991	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.813	-	-
	16 Nov 2021	0445_QC107_211117	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-	-
	17 Nov 2021	0445_QC207_211117	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.52	0.31	0.41
		0445_SW355_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-	-
	04 May 2022	0445_QC204_220504	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.37	0.27	0.32
		0445_SW355_220504	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-	-
	07 May 2022	0445_QC104_220504	Field_D	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.25	-	-
	14 Oct 2022	0445_SW355_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.28	-	-
	04 May 2023	0445_SW355_230504	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-	-
	23 Oct 2023	0445_QC101_20231023	Field_D	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.30	-	-
		0445_QC201_20231023	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.26	0.16	0.21
		0445_SW355_20231023	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.28	-	-
SW370	23 Oct 2017	0445N_SW370_0.01_171023	Normal	ES1726698	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.003	<0.001	<0.001	0.550	-	-
	17 Nov 2021	0445_SW370_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-	-

					Perfluorocarbons													
					Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane Sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
Location Code	Date	Field ID	Sample Type	Lab Report No.														
	06 May 2022	0445_SW370_220506	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-	-
	15 Oct 2022	0445_QC109_20221015	Field_D	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	-	-
		0445_QC209_221015	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.29	0.19	0.27
		0445_SW370_221015	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	-	-
	04 May 2023	0445_SW370_230504	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-	-
	26 Oct 2023	0445_SW370_20231026	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	-	-
SW374	23 Oct 2017	0445N_SW374_0.1_171023	Normal	ES1726698	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.525	-	-
	17 Nov 2021	0445_SW374_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-	-
	06 May 2022	0445_SW374_220506	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-	-
	15 Oct 2022	0445_SW374_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-	-
	05 May 2023	0445_SW374_230505	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	-	-
	26 Oct 2023	0445_SW374_20231026	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-	-
SW375	23 Oct 2017	0445N_QC128_171023	Field_D	ES1726698	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.465	-	-
		0445N_QC228_171023	Interlab_D	569535	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.451	-	-
		0445N_SW375_0.1_171023	Normal	ES1726698	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.440	-	-
	01 Aug 2018	0445_QC105_180801	Field_D	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.139	-	-
		0445_QC205_180801	Interlab_D	611290	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.145	0.076	0.107
		0445_SW375_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.144	-	-
	17 Nov 2021	0445_SW375_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-	-
	06 May 2022	0445_SW375_220506	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-	-
	12 Oct 2022	0445_SW375_221012	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-	-
	05 May 2023	0445_SW375_230505	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-	-
	26 Oct 2023	0445_SW375_20231026	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-	-
SW379	16 Nov 2021	0445_SW379_21116	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.07	-	-
	14 Oct 2022	0445_SW379_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	-	-
SW380	10 Nov 2021	0445_SW380_211108	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.59	-	-
	14 Oct 2022	0445_SW380_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	-	-
	06 May 2023	0445_SW380_230506	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	-	-
SW382	24 Oct 2017	0445E_QC131_171024	Field_D	ES1726816	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.164	-	-
		0445E_SW382_0.1_171024	Normal	ES1726816	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.175	-	-
	16 Nov 2021	0445_QC109_211116	Field_D	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
		0445_QC209_211116	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.01
	17 Nov 2021	0445_SW382_211116	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	03 May 2022	0445_SW382_220503	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	13 Oct 2022	0445_SW382_221013	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	05 May 2023	0445_SW382_230505	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	25 Oct 2023	0445_QC104_20231025	Field_D	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
		0445_QC204_20231025	Interlab_D	1039507	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.01
		0445_SW382_20231025	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
SW387	25 Oct 2017	0445E_SW387_0.2_171025	Normal	ES1726955	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.222	-	-
	16 Nov 2021	0445_SW387_211116	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	-	-
	03 May 2022	0445_QC101_220503	Field_D	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-	-
		0445_QC201_220503	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.11	0.04	0.1
		0445_SW387_220503	Normal	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	-	-
	12 Oct 2022	0445_SW387_221012	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	-	-
	06 May 2023	0445_SW387_230506	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	27 Oct 2023	0445_SW387_20231027	Normal	EM2319356	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	-	-
SW388	25 Oct 2017	0445E_SW388_0.2_171025	Normal	ES1726955	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.416	-	-
	16 Nov 2021	0445_SW388_211116	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.54	-	-
	16 May 2022	0445S_SW388_220516	Normal	EM2209833	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.07	-	-
	12 Oct 2022	0445_SW388_221210	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	-	-
SW390	13 Oct 2017	0445_SW390_0.5_171013	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0006	-	-
	31 Jul 2018	0445_SW390_0.5_180731	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-	-
	26 Nov 2018	0445_SW390_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0010	-	-
	09 Nov 2021	0445_SW390_211109	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	05 May 2022	0445_SW390_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	11 Oct 2022	0445_SW390_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	04 May 2023	0445_SW390_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	27 Oct 2023	0445_SW390_20231027	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
SW393	16 Oct 2017	0445_SW393_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0029	-	-
	01 Aug 2018	0445_SW393_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-	-
	26 Nov 2018	0445_SW393_0.2_181127	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0009	-	-
	16 Nov 2021	0445_SW393_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	06 May 2022	0445_SW393_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	10 Nov 2022	0445_SW393_221110	Normal	EM2222367	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	04 May 2023	0445_SW393_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-

					Perfluorocarbons													
					Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-Octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane Sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
Location Code	Date	Field ID	Sample Type	Lab Report No.														
	26 Oct 2023	0445_SW393_20231025	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
SW395	09 Oct 2017	0445_QC153_171009	Field_D	ES1725705	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.251	-	-
		0445_QC253_171010	Interlab_D	567888	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.274	-	-
		0445_SW395_0.5_171010	Normal	ES1725705	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.286	-	-
	03 Nov 2019	0445_SW395_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.157	-	-
	16 Nov 2021	0445_SW395_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	-	-
	09 May 2022	0445_SW395_220509	Normal	EM2208629	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	-	-
	10 Nov 2022	0445_SW395_221110	Normal	EM2222367	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.43	-	-
	06 May 2023	0445_SW395_230506	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	-	-
	27 Oct 2023	0445_SW395_20231027	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	-	-
SW396	10 Oct 2017	0445_SW396_0.5_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	2.54	-	-
	02 Aug 2018	0445_SW396_0.5_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	3.58	-	-
	03 Nov 2019	0445_SW396_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	2.20	-	-
	16 Nov 2021	0445_SW396_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.02	-	-
	03 May 2022	0445_SW396_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.99	-	-
	12 Oct 2022	0445_SW396_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.40	-	-
	06 May 2023	0445_SW396_ 230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.27	-	-
	27 Oct 2023	0445_SW396_20231027	Normal	EM2319357	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.63	-	-
SW397	10 Oct 2017	0445_SW397_0.5_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	18.2	-	-
		0445_SW397_1.0_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	17.7	-	-
		0445_SW397_1.3_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.023	<0.001	<0.001	18.2	-	-
	02 Aug 2018	0445_SW397_0.5_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.001	0.022	<0.001	<0.001	11.0	-	-
	26 Nov 2018	0445_QC125_181126	Field_D	ES1835587	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.023	<0.001	<0.001	10.7	-	-
		0445_QC225_181126	Interlab_D	630629	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	0.013	<0.001	<0.001	17	6.3	12
		0445_SW397_0.5_181126	Normal	ES1835587	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	0.002	0.024	<0.001	<0.001	12.7	-	-
	03 Nov 2019	0445_QC135_191103	Field_D	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	0.021	<0.002	<0.002	13.9	-	-
		0445_SW397_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	0.019	<0.002	<0.002	13.5	-	-
	16 Nov 2021	0445_SW397_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.62	-	-
	03 May 2022	0445_SW397_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.7	-	-
	12 Oct 2022	0445_SW397_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.09	-	-
	06 May 2023	0445_SW397_ 230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.25	-	-
	25 Oct 2023	0445_SW397_20231025	Normal	EM2319357	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.56	-	-
SW398	12 Oct 2017	0445_SW398_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0009	-	-
	01 Aug 2018	0445_SW398_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-	-
	26 Nov 2018	0445_SW398_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0004	-	-
	16 Nov 2021	0445_SW398_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	03 May 2022	0445_SW398_220503	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	12 Oct 2022	0445_SW398_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-	-
	06 May 2023	0445_SW398_230506	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	27 Oct 2023	0445_SW398_20231027	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
SW400	10 Oct 2017	0445_SW400_0.3_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.27	-	-
	02 Aug 2018	0445_QC106_180802	Field_D	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.337	-	-
		0445_QC206_180802	Interlab_D	611294	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	0.005	<0.001	<0.005	<0.001	<0.001	0.494	0.162	0.362
		0445_SW400_0.2_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.391	-	-
	03 Nov 2019	0445_SW400_0.2_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.326	-	-
	16 Nov 2021	0445_SW400_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.25	-	-
	03 May 2022	0445_SW400_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.75	-	-
	12 Oct 2022	0445_SW400_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.77	-	-
	06 May 2023	0445_SW400_ 230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.40	-	-
	25 Oct 2023	0445_SW400_20231025	Normal	EM2319357	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.29	-	-
SW401	10 Oct 2017	0445_SW401_0.4_171010	Normal	ES1725715	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.10	-	-
	03 Nov 2019	0445_SW401_0.2_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.291	-	-
	16 Nov 2021	0445_SW401_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.31	-	-
	03 May 2022	0445_SW401_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.72	-	-
	12 Oct 2022	0445_SW401_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.36	-	-
	06 May 2023	0445_SW401_ 230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.48	-	-
	25 Oct 2023	0445_SW401_20231025	Normal	EM2319357	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.58	-	-
SW403	12 Oct 2017	0445_SW403_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.336	-	-
	12 Nov 2021	0445_SW403_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.84	-	-
	05 May 2022	0445_SW403_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.84	-	-
	15 Oct 2022	0445_SW403_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-	-
	05 May 2023	0445_SW403_230505	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.27	-	-
	26 Oct 2023	0445_SW403_20231025	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.45	-	-
SW404	11 Oct 2017	0445_SW404_0.5_171011	Normal	ES1725716	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0012	-	-
	01 Aug 2018	0445_SW404_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-	-
	26 Nov 2018	0445_SW404_0.52_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0025	-	-

					Perfluorocarbons													
					Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane Sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
Location Code	Date	Field ID	Sample Type	Lab Report No.														
	12 Nov 2021	0445_SW404_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	17 Nov 2021	0445_SW404_211117	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	05 May 2022	0445_SW404_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	15 Oct 2022	0445_SW404_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	04 May 2023	0445_SW404_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	23 Oct 2023	0445_SW404_20231023	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
SW405	12 Oct 2017	0445_SW405_0.2_171012	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.333	-	-
	02 Aug 2018	0445_SW405_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.118	-	-
	12 Nov 2021	0445_SW405_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.74	-	-
	05 May 2022	0445_SW405_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	-	-
	15 Oct 2022	0445_SW405_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-	-
	06 May 2023	0445_SW405_230506	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	-	-
	25 Oct 2023	0445_SW405_20231025	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.93	-	-
SW409	14 Feb 2018	0445_SW409_0.0_180214	Normal	ES1805190	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.139	-	-
	12 Nov 2021	0445_SW409_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-	-
	06 May 2022	0445_SW409_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-	-
	15 Oct 2022	0445_SW409_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	-	-
	04 May 2023	0445_SW409_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-	-
	24 Oct 2023	0445_SW409_20231023	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	-	-
SW412	12 Oct 2017	0445_SW412_0.5_171012	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.272	-	-
	02 Aug 2018	0445_SW412_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0913	-	-
	26 Nov 2018	0445_QC126_181126	Field_D	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0789	-	-
		0445_SW412_0.2_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0766	-	-
	12 Nov 2021	0445_SW412_211112	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-	-
	06 May 2022	0445_SW412_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	-	-
	15 Oct 2022	0445_SW412_221015	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-	-
	05 May 2023	0445_SW412_230505	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-	-
	26 Oct 2023	0445_SW412_20231026	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	-	-
SW416	11 Oct 2017	0445_SW416_0.5_171011	Normal	ES1725716	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-	-
	01 Aug 2018	0445_SW416_0.5_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0003	-	-
	26 Nov 2018	0445_SW416_0.5_181126	Normal	ES1835585	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0005	-	-
	12 Nov 2021	0445_SW416_211111	Normal	EM2122519	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	05 May 2022	0445_SW416_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	12 Oct 2022	0445_SW416_221012	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	04 May 2023	0445_SW416_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	24 Oct 2023	0445_SW416_20231024	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
SW424	10 Oct 2017	0445_QC213	Interlab_D	567942	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	6.38	-	-
	11 Oct 2017	0445_QC113	Field_D	ES1725716	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	5.82	-	-
		0445_SW424_0.1_171011	Normal	ES1725716	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	5.05	-	-
	13 Oct 2017	0445_SW424_0.1_171013	Normal	ES1725997	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.010	0.003	<0.001	1.68	-	-
	15 Nov 2021	0445_QC208_211115	Interlab_D	842787	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.22	1.14	1.87
	16 Nov 2021	0445_SW424_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.36	-	-
	07 May 2022	0445_SW424_220504	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.45	-	-
	11 Oct 2022	0445_SW424_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.03	-	-
	02 May 2023	0445_SW424_230502	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.46	-	-
	23 Oct 2023	0445_SW424_20231023	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.97	-	-
SW427	16 Oct 2017	0445_SW427_0.0_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	0.156	-	-
	15 Nov 2021	0445_SW427_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.25	-	-
	06 May 2022	0445_SW427_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-	-
	11 Oct 2022	0445_SW427_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.56	-	-
	04 May 2023	0445_SW427_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.54	-	-
	23 Oct 2023	0445_SW427_20231023	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14	-	-
SW430	16 Oct 2017	0445_SW430_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0766	-	-
	02 Aug 2018	0445_SW430_0.1_180802	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0471	-	-
	16 Nov 2021	0445_SW430_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	-	-
	06 May 2022	0445_SW430_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	11 Oct 2022	0445_SW430_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	-	-
	04 May 2023	0445_SW430_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-	-
	23 Oct 2023	0445_SW430_20231023	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-	-
SW431	16 Oct 2017	0445_SW431_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0867	-	-
	16 Nov 2021	0445_SW431_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	-	-
	06 May 2022	0445_SW431_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-	-
	11 Oct 2022	0445_SW431_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-	-
	02 May 2023	0445_SW431_230502	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-	-
	23 Oct 2023	0445_SW431_20231023	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-	-
SW432	16 Oct 2017	0445_SW432_0.1_171016	Normal	ES1726004	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0936	-	-

					Perfluorocarbons													
					Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	ug/L
LOR					0.0005	0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0003	0.001	0.001
PFAS NEMP 2.0 Table 1 Health Drinking Water																		
PFAS NEMP 2.0 Table 1 Health Recreational Water																		
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
Location Code	Date	Field ID	Sample Type	Lab Report No.														
	16 Nov 2021	0445_SW432_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-	-
	06 May 2022	0445_SW432_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-	-
	11 Oct 2022	0445_SW432_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	-	-
	04 May 2023	0445_SW432_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	-	-
	23 Oct 2023	0445_SW432_20231023	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-	-
SW434	09 Oct 2017	0445_SW434_0.5_171011	Normal	ES1725705	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0045	-	-
	15 Nov 2021	0445_SW434_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-	-
	06 May 2022	0445_SW434_220506	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-	-
	11 Oct 2022	0445_SW434_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
	02 May 2023	0445_SW434_230502	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-	-
	25 Oct 2023	0445_SW434_20231025	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
SW448	20 Oct 2017	0445S_SW448_0.1_171020	Normal	ES1726682	0.0056	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.012	0.005	<0.001	3.09	-	-
	16 Nov 2021	0445_SW448_211115	Normal	EM2122998	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.85	-	-
	14 Oct 2022	0445_SW448_221014	Normal	EM2220286	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.46	-	-
	03 May 2023	0445_QC104_230503	Field_D	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.13	-	-
		0445_QC204_230503	Interlab_D	987797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.34	1.53	2.1
		0445_SW448_230503	Normal	EM2308015	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.04	-	-
SW462	23 Nov 2017	0445_SW462_0.1_171123	Normal	ES1729741	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.172	-	-
	01 Aug 2018	0445_SW462_0.2_180801	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0608	-	-
	11 Nov 2021	0445_SW462_211111	Normal	EM2122518	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	-	-
	05 May 2022	0445_QC205_220505	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.04	0.06
		0445_SW462_220505	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-	-
	07 May 2022	0445_QC105_220505	Field_D	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	-	-
	11 Oct 2022	0445_SW462_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-	-
	04 May 2023	0445_SW462_230504	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-	-
	24 Oct 2023	0445_SW462_20231024	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.60	-	-
SW463	11 Dec 2017	0445_SW463_0.1_171211	Normal	ES1731468	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.50	-	-
	16 Nov 2021	0445_SW463_211115	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.35	-	-
	04 May 2022	0445_SW463_220504	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.56	-	-
	11 Oct 2022	0445_QC101_221011	Field_D	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.80	-	-
		0445_QC201_221011	Interlab_D	932350	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.88	1.76	2.41
		0445_SW463_221011	Normal	EM2220271	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.80	-	-
	02 May 2023	0445_SW463_230502	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.37	-	-
	23 Oct 2023	0445_SW463_20231023	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.50	-	-
SW470	02 Aug 2018	0445_SW470_0.5_180802	Normal	ES1823003	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.388	-	-
	03 Nov 2019	0445_SW470_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	0.460	-	-
	16 Nov 2021	0445_SW470_211116	Normal	EM2122999	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	-	-
	03 May 2022	0445_SW470_220503	Normal	EM2208383	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.48	-	-
	04 May 2022	0445_QC203_220504	Interlab_D	886780	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.87	0.57	0.7
	07 May 2022	0445_QC103_220504	Field_D	EM2208381	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.73	-	-
	12 Oct 2022	0445_SW470_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	-	-
	06 May 2023	0445_SW470_230506	Normal	EM2308009	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21	-	-
	27 Oct 2023	0445_SW470_20231027	Normal	EM2319354	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	-	-
SW471	02 Aug 2018	0445_SW471_0.2_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	1.92	-	-
	03 Nov 2019	0445_SW471_0.5_191103	Normal	ES1936497	<0.0020	<0.005	<0.005	<0.005	<0.005	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	3.97	-	-
	16 Nov 2021	0445_SW471_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.60	-	-
	03 May 2022	0445_SW471_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.28	-	-
	12 Oct 2022	0445_SW471_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.89	-	-
	06 May 2023	0445_SW471_230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.10	-	-
	25 Oct 2023	0445_SW471_20231025	Normal	EM2319357	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.34	-	-
SW487	02 Aug 2018	0445_SW487_0.01_180802	Normal	ES1823005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	0.022	<0.001	<0.001	12.0	-	-
	16 Nov 2021	0445_SW487_211116	Normal	EM2122968	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.84	-	-
	03 May 2022	0445_SW487_220503	Normal	EM2208382	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.0	-	-
	12 Oct 2022	0445_SW487_221012	Normal	EM2220270	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.54	-	-
	06 May 2023	0445_SW487_230506	Normal	EM2308004	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.18	-	-
	25 Oct 2023	0445_SW487_20231025	Normal	EM2319357	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.04	-	-

Table B3 - RPDs

			Date	23 Oct 2023			23 Oct 2023			23 Oct 2023		
			Field ID	0445_SW323_20231023	0445_QC103_20231023		0445_SW323_20231023	0445_QC203_20231023		0445_SW326_20231023	0445_QC102_20231023	
			Matrix Type	Water	Water		Water	Water		Water	Water	
			Lab Report Number	EM2319356	EM2319356	RPD	EM2319356	1039507	RPD	EM2319356	EM2319356	RPD
	Unit	LOR										
Perfluorocarbons												
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01		1.02	1.08	6	1.02	0.88	15	2.62	2.68	2
Perfluorooctanoate (PFOA)	µg/L	0.01		0.03	0.04	29	0.03	0.03	0	0.11	0.12	9
Sum of PFHxS and PFOS	µg/L	0.01		1.29	1.34	4	1.29	1.11	15	3.21	3.31	3
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01		<0.02	<0.02	0	<0.02	0.02	0	0.05	0.04	22
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01		0.02	<0.02	0	0.02	0.02	0	0.04	0.04	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01		0.27	0.26	4	0.27	0.23	16	0.59	0.63	7
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01		<0.02	<0.02	0	<0.02	0.01	0	0.06	0.06	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01		<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	0.05		<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.01		0.04	0.04	0	0.04	0.03	29	0.10	0.11	10
Perfluorohexanoic acid (PFHxA)	µg/L	0.01		0.06	0.07	15	0.06	0.05	18	0.17	0.18	6
Perfluoropropanesulfonic acid (PFPrS)	UG/L	0.01						<0.01				
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01		0.02	0.02	0	0.02	0.02	0	0.06	0.06	0
Perfluorononanoic acid (PFNA)	µg/L	0.01		<0.02	<0.02	0	<0.02	<0.01	0	0.03	0.03	0
Perfluorodecanoic acid (PFDA)	µg/L	0.01		<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01		<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01		<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01		<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01		<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02		<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	0.05		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05		<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02		<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02		<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01		<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05		<0.05	<0.05	0	<0.05	<0.05	0	0.07	0.08	13
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.01		<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01		<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Sum of PFAS	µg/L	0.01		1.46	1.51	3	1.46	1.29	12	3.90	4.03	3
Sum of US EPA PFAS (PFOS + PFOA)*	UG/L	0.01						0.91				
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L	0.01						1.14				
NA												
Perfluorononane sulfonate (PFNS)	µg/L	0.01						<0.01				
Sum of WA DWER PFAS (n=10)*	UG/L	0.01		1.44	1.51	5	1.44	1.26	13	3.77	3.90	3

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 81 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		23 Oct 2023			23 Oct 2023			23 Oct 2023		
		0445_SW326_20231023	0445_QC202_20231023		0445_SW349_20231023	0445_QC100_20231023		0445_SW349_20231023	0445_QC200_20231023	
		Water	Water		Water	Water		Water	Water	
		EM2319356	1039507	RPD	EM2319356	EM2319356	RPD	EM2319356	1039507	RPD
	Unit									
Perfluorocarbons										
Perfluorooctane sulfonic acid (PFOS)	µg/L	2.62	2.8	7	0.67	0.64	5	0.67	0.63	6
Perfluorooctanoate (PFOA)	µg/L	0.11	0.10	10	0.04	0.04	0	0.04	0.03	29
Sum of PFHxS and PFOS	µg/L	3.21	3.39	5	0.86	0.85	1	0.86	0.79	8
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.05	0.04	22	0.03	0.04	29	0.03	0.03	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.04	0.04	0	0.03	0.02	40	0.03	0.02	40
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.59	0.59	0	0.19	0.21	10	0.19	0.16	17
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.06	0.06	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	0.06	0	<0.1	<0.1	0	<0.1	<0.05	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.10	0.11	10	0.05	0.06	18	0.05	0.04	22
Perfluorohexanoic acid (PFHxA)	µg/L	0.17	0.14	19	0.08	0.08	0	0.08	0.06	29
Perfluoropropanesulfonic acid (PFPrS)	UG/L		0.02						0.01	
Perfluoroheptanoic acid (PFHpA)	µg/L	0.06	0.05	18	0.03	0.03	0	0.03	0.02	40
Perfluorononanoic acid (PFNA)	µg/L	0.03	0.03	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.07	0.07	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Sum of PFAS	µg/L	3.90	4.13	6	1.12	1.12	0	1.12	1	11
Sum of US EPA PFAS (PFOS + PFOA)*	UG/L		2.9						0.66	
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L		3.49						0.82	
NA										
Perfluorononane sulfonate (PFNS)	µg/L		0.02						<0.01	
Sum of WA DWER PFAS (n=10)*	UG/L	3.77	3.96	5	1.09	1.10	1	1.09	0.97	12

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each E
(1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between labc
the row header relate to those used in the primary laboratory

		23 Oct 2023			23 Oct 2023			25 Oct 2023		
		0445_SW355_20231023	0445_QC101_20231023		0445_SW355_20231023	0445_QC201_20231023		0445_SW382_20231025	0445_QC104_20231025	
		Water	Water		Water	Water		Water	Water	
		EM2319356	EM2319356	RPD	EM2319356	1039507	RPD	EM2319356	EM2319356	RPD
	Unit									
Perfluorocarbons										
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.21	0.22	5	0.21	0.16	27	<0.01	<0.01	0
Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	0	0.01	<0.01	0	<0.01	<0.01	0
Sum of PFHxS and PFOS	µg/L	0.27	0.28	4	0.27	0.21	25	<0.01	<0.01	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	<0.02	<0.02	0	<0.02	0.01	0	<0.02	<0.02	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.06	0.06	0	0.06	0.05	18	<0.01	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0
Perfluoropentanoic acid (PFPeA)	µg/L	<0.02	<0.02	0	<0.02	0.02	0	<0.02	<0.02	0
Perfluorohexanoic acid (PFHxA)	µg/L	<0.02	0.02	0	<0.02	0.02	0	<0.02	<0.02	0
Perfluoropropanesulfonic acid (PFPrS)	UG/L					<0.01				
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Sum of PFAS	µg/L	0.28	0.30	7	0.28	0.26	7	<0.01	<0.01	0
Sum of US EPA PFAS (PFOS + PFOA)*	UG/L					0.16				
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L					0.21				
NA										
Perfluorononane sulfonate (PFNS)	µg/L					<0.01				
Sum of WA DWER PFAS (n=10)*	UG/L	0.28	0.30	7	0.28	0.26	7	<0.01	<0.01	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each E
(1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between labc
the row header relate to those used in the primary laboratory

		25 Oct 2023			25 Oct 2023			25 Oct 2023		
		0445_SW382_20231025	0445_QC204_20231025		0445_MW319_20231025	0445_QC106_20231025		0445_MW319_20231025	0445_QC206_20231025	
		Water	Water		Water	Water		Water	Water	
		EM2319356	1039507	RPD	EM2319356	EM2319356	RPD	EM2319356	1039507	RPD
	Unit									
Perfluorocarbons										
Perfluorooctane sulfonic acid (PFOS)	µg/L	<0.01	<0.01	0	0.18	0.17	6	0.18	0.14	25
Perfluorooctanoate (PFOA)	µg/L	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
Sum of PFHxS and PFOS	µg/L	<0.01	<0.01	0	0.22	0.21	5	0.22	0.17	26
Perfluorobutane sulfonic acid (PFBS)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	<0.01	<0.01	0	0.04	0.04	0	0.04	0.03	29
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	<0.05	0	<0.1	<0.1	0	<0.1	<0.05	0
Perfluoropentanoic acid (PFPeA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoropropanesulfonic acid (PFPrS)	UG/L		<0.01						<0.01	
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Sum of PFAS	µg/L	<0.01	<0.1	0	0.22	0.21	5	0.22	0.17	26
Sum of US EPA PFAS (PFOS + PFOA)*	UG/L		<0.01						0.14	
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L		<0.01						0.17	
NA										
Perfluorononane sulfonate (PFNS)	µg/L		<0.01						<0.01	
Sum of WA DWER PFAS (n=10)*	UG/L	<0.01	<0.05	0	0.22	0.21	5	0.22	0.17	26

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each E
(1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between labc
the row header relate to those used in the primary laboratory

		25 Oct 2023			25 Oct 2023			26 Oct 2023		
		0445_MW416_20231025	0445_QC105_20231025		0445_MW416_20231025	0445_QC205_20231024		0445_MW354_20231026	0445_QC109_20231026	
		Water	Water		Water	Water		Water	Water	
		EM2319356	EM2319356	RPD	EM2319356	1039507	RPD	EM2319356	EM2319356	RPD
	Unit									
Perfluorocarbons										
Perfluorooctane sulfonic acid (PFOS)	µg/L	<0.01	<0.01	0	<0.01	<0.01	0	0.05	0.05	0
Perfluorooctanoate (PFOA)	µg/L	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
Sum of PFHxS and PFOS	µg/L	<0.01	<0.01	0	<0.01	<0.01	0	0.08	0.09	12
Perfluorobutane sulfonic acid (PFBS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	<0.01	<0.01	0	<0.01	<0.01	0	0.03	0.04	29
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0
Perfluoropentanoic acid (PFPeA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorohexanoic acid (PFHxA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluoropropanesulfonic acid (PFPrS)	UG/L					<0.01				
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Sum of PFAS	µg/L	<0.01	<0.01	0	<0.01	<0.1	0	0.08	0.09	12
Sum of US EPA PFAS (PFOS + PFOA)*	UG/L					<0.01				
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L					<0.01				
NA										
Perfluorononane sulfonate (PFNS)	µg/L					<0.01				
Sum of WA DWER PFAS (n=10)*	UG/L	<0.01	<0.01	0	<0.01	<0.05	0	0.08	0.09	12

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each E
(1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between labc
the row header relate to those used in the primary laboratory

		26 Oct 2023			26 Oct 2023			26 Oct 2023		
		0445_MW354_20231026	0445_QC209_20231026		0445_MW042_20231026	0445_QC108_20231026		0445_MW042_20231026	0445_QC208_20231026	
		Water	Water		Water	Water		Water	Water	
		EM2319356	1039507	RPD	EM2319356	EM2319356	RPD	EM2319356	1039507	RPD
	Unit									
Perfluorocarbons										
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.05	0.04	22	7.94	7.03	12	7.94	7.4	7
Perfluorooctanoate (PFOA)	µg/L	<0.01	<0.01	0	0.50	0.46	8	0.50	0.45	11
Sum of PFHxS and PFOS	µg/L	0.08	0.06	29	14.8	13.5	9	14.8	13.2	11
Perfluorobutane sulfonic acid (PFBS)	µg/L	<0.02	<0.01	0	1.00	0.93	7	1.00	0.87	14
Perfluoropentane sulfonic acid (PFPeS)	µg/L	<0.02	<0.01	0	1.08	1.05	3	1.08	1.1	2
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.03	0.02	40	6.87	6.48	6	6.87	5.8	17
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	<0.01	0	0.61	0.53	14	0.61	0.60	2
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	<0.05	0	0.2	0.2	0	0.2	0.22	10
Perfluoropentanoic acid (PFPeA)	µg/L	<0.02	<0.01	0	0.40	0.37	8	0.40	0.33	19
Perfluorohexanoic acid (PFHxA)	µg/L	<0.02	<0.01	0	1.72	1.59	8	1.72	1.3	28
Perfluoropropanesulfonic acid (PFPrS)	UG/L		<0.01						0.33	
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	<0.01	0	0.28	0.26	7	0.28	0.24	15
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	<0.05	0	0.24	0.21	13	0.24	0.18	29
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Sum of PFAS	µg/L	0.08	<0.1	0	20.8	19.1	9	20.8	18.82	10
Sum of US EPA PFAS (PFOS + PFOA)*	UG/L		0.04						7.85	
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L		0.06						13.65	
NA										
Perfluorononane sulfonate (PFNS)	µg/L		<0.01						<0.01	
Sum of WA DWER PFAS (n=10)*	UG/L	0.08	0.06	29	19.2	17.5	9	19.2	16.79	13

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each E
(1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between labc
the row header relate to those used in the primary laboratory

		26 Oct 2023			26 Oct 2023			28 Nov 2023		
		0445_MW009_20231026	0445_QC107_20231026		0445_MW009_20231026	0445_QC207_20231026		0445_MW321_231128	0445_QC101_231128	
		Water	Water		Water	Water		Water	Water	
		EM2319356	EM2319356	RPD	EM2319356	1039507	RPD	EM2321318	EM2321318	RPD
	Unit									
Perfluorocarbons										
Perfluorooctane sulfonic acid (PFOS)	µg/L	9.98	8.79	13	9.98	9.5	5	820	455	57
Perfluorooctanoate (PFOA)	µg/L	0.71	0.63	12	0.71	0.61	15	11.2	7.68	37
Sum of PFHxS and PFOS	µg/L	20.2	17.1	17	20.2	17.3	15	984	570	53
Perfluorobutane sulfonic acid (PFBS)	µg/L	1.35	1.24	8	1.35	1.1	20	3.89	2.28	52
Perfluoropentane sulfonic acid (PFPeS)	µg/L	1.55	1.30	18	1.55	1.1	34	8.84	5.21	52
Perfluorohexane sulfonic acid (PFHxS)	µg/L	10.2	8.35	20	10.2	7.8	27	164	115	35
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.81	0.70	15	0.81	0.74	9	40.6	31.7	25
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	0.3	0.2	40	0.3	0.30	0	0.4	0.3	29
Perfluoropentanoic acid (PFPeA)	µg/L	0.60	0.52	14	0.60	0.44	31	1.62	0.93	54
Perfluorohexanoic acid (PFHxA)	µg/L	2.57	2.31	11	2.57	1.8	35	11.0	5.78	62
Perfluoropropanesulfonic acid (PFPrS)	UG/L					0.44				
Perfluoroheptanoic acid (PFHpA)	µg/L	0.38	0.34	11	0.38	0.31	20	2.14	1.32	47
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	2.24	1.09	69
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	0.04	<0.02	67
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.02	0	<0.02	<0.05	0	<0.02	<0.02	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.28	0.25	11	0.28	0.21	29	1.68	1.06	45
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	1.46	0.59	85
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0
Sum of PFAS	µg/L	28.7	24.6	15	28.7	24.36	16	1,070	628	52
Sum of US EPA PFAS (PFOS + PFOA)*	UG/L					10.11				
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L					17.91				
NA										
Perfluorononane sulfonate (PFNS)	µg/L					0.01				
Sum of WA DWER PFAS (n=10)*	UG/L	26.4	22.6	16	26.4	22.07	18	1,020	590	53

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each E
(1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between labc
the row header relate to those used in the primary laboratory

		28 Nov 2023			28 Nov 2023			28 Nov 2023		
		0445_MW321_231128	0445_QC201_231128		0445_SW332_231128	0445_QC100_231128		0445_SW332_231128	0445_QC200_231128	
		Water	Water		Water	Water		Water	Water	
		EM2321318	1049115	RPD	EM2321318	EM2321318	RPD	EM2321318	1049115	RPD
	Unit									
Perfluorocarbons										
Perfluorooctane sulfonic acid (PFOS)	µg/L	820	480	52	3.52	3.22	9	3.52	3.3	6
Perfluorooctanoate (PFOA)	µg/L	11.2	5.8	64	0.06	0.05	18	0.06	0.04	40
Sum of PFHxS and PFOS	µg/L	984	579	52	4.30	3.96	8	4.30	3.96	8
Perfluorobutane sulfonic acid (PFBS)	µg/L	3.89	1.8	73	0.28	0.27	4	0.28	0.23	20
Perfluoropentane sulfonic acid (PFPeS)	µg/L	8.84	2.6	109	0.12	0.12	0	0.12	0.09	29
Perfluorohexane sulfonic acid (PFHxS)	µg/L	164	99	49	0.78	0.74	5	0.78	0.66	17
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	40.6	20	68	0.05	0.04	22	0.05	0.04	22
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<1	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	0.4	0.28	35	0.2	0.2	0	0.2	0.19	5
Perfluoropentanoic acid (PFPeA)	µg/L	1.62	0.86	61	0.16	0.16	0	0.16	0.14	13
Perfluorohexanoic acid (PFHxA)	µg/L	11.0	5.0	75	0.33	0.34	3	0.33	0.27	20
Perfluoropropanesulfonic acid (PFPrS)	UG/L		0.92						0.14	
Perfluoroheptanoic acid (PFHpA)	µg/L	2.14	1.2	56	0.02	0.02	0	0.02	0.02	0
Perfluorononanoic acid (PFNA)	µg/L	2.24	<1	77	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	0.04	<1	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.05	0	<0.02	<0.02	0	<0.02	<0.05	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	1.68	1.0	51	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	1.46	0.33	126	<0.05	<0.05	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0
Sum of PFAS	µg/L	1,070	618.79	53	5.52	5.16	7	5.52	5.14	7
Sum of US EPA PFAS (PFOS + PFOA)*	UG/L		485.8						3.34	
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L		584.8						4	
NA										
Perfluorononane sulfonate (PFNS)	µg/L		<1						0.02	
Sum of WA DWER PFAS (n=10)*	UG/L	1,020	595.27	53	5.35	5.00	7	5.35	4.85	10

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each E
(1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between labc
the row header relate to those used in the primary laboratory

Table B4 - Blank Results

		Lab Report Number	EM2319356					
		Field ID	0445_QC300_20231023	0445_QC302_20231024	0445_QC304_20231025	0445_QC306_20231026	0445_QC308_20231027	0445_QC500_20231027
		Date	23 Oct 2023	24 Oct 2023	25 Oct 2023	26 Oct 2023	27 Oct 2023	27 Oct 2023
		Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip_B
	Unit	LOR						
Perfluorocarbons								
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-(N-methylperfluoro-1-octane sulfonamido) ethanol (N-MeFOSE)	ug/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
NA								
Sum of WA DWER PFAS (n=10)*	UG/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table B4 - Blank Results

		EM2319356			EM2321318		
		0445_QC501_20231027	0445_QC502_2023127	0445_QC503_20231027	0445_QC300_231127	0445_QC301_231128	0445_QC500_231128
		27 Oct 2023	27 Oct 2023	27 Oct 2023	27 Nov 2023	28 Nov 2023	28 Nov 2023
		Trip_B	Trip_B	Trip_B	Rinsate	Rinsate	Trip_B
	Unit						
Perfluorocarbons							
Perfluorooctane sulfonic acid (PFOS)	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoate (PFOA)	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanesulfonic acid (PFDS)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-(N-methylperfluoro-1-octane sulfonamido) ethanol (N-MeFOSE)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonate (8:2 FtS)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sum of PFAS	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
NA							
Sum of WA DWER PFAS (n=10)*	UG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

APPENDIX

C

LABORATORY CERTIFICATES

Cardno

Chain of Custody

Sheet 1 of 1

PM Name: [redacted]

Phone: [redacted]

Address: [redacted]

PM Email: [redacted]

Results Email (please email results to all listed): [redacted]

Project Number: VIC_0445_PFASOMP_23

Laboratory (name, phone,fax no & contact person) : Eurofins [redacted]

Sample ID	Laboratory ID	Container	Sampling		Sample Matrix					Sample preservation				Analysis												
			Date	Time	Water	Sediment				Ice				Per- and Polyfluoroalkyl Substances (PFASs)												HOLD
0445_QC200_231128		2x bottles	28/11/2023		x					x				x												
0445_QC201_231128		2x bottles	28/11/2023		x					x				x												
													2311													

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples. **Sampler name:** (print and signature) [redacted]

Relinquished by (Sampler): (print and signature) [redacted]	Date	Time	Received by (Courier/Lab): (print and signature)	Date: 29/11/2023		
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date		Time
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date		Time

Please supply results electronically in spreadsheet and ESDAT files.

Turn around time: (24 hour/48 hour/3 days/5 days)

Please circle

[redacted]

Revision 2
Approved 2 December 2016

eurofins | Environment Testing

PROJECT INFORMATION

Date Received: 29/11

Company:

Contact person:

Contact Number:

Contact E-mail:

Project Name/site:

Project Number: 0445_QC200 & 201

COC: **Attached** ☐
E-mailed ☐
Not received ☐

#1049115
29/11/23
JS

[redacted]

[redacted]

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd Eurofins ARL Pty Ltd Eurofins Environment Testing NZ Ltd

[redacted]

Sample Receipt Advice

Company name:	Stantec Australia Pty Ltd (VIC)
Contact name:	[redacted]
Project name:	VIC_0445_PFASOMP_23
Project ID:	Not provided
Turnaround time:	5 Day
Date/Time received	Nov 29, 2023 5:29 PM
Eurofins reference	1049115

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted]

Results will be delivered electronically via email to [redacted]

Note: A copy of these results will also be delivered to the general Stantec Australia Pty Ltd (VIC) email address.

eurofins

Eurofins Environment Testing Australia Pty Ltd [redacted]

Eurofins ARL Pty Ltd [redacted] Eurofins Environment Testing NZ Ltd [redacted]

web: www.eurofins.com.au [redacted]

Company Name:	Stantec Australia Pty Ltd (VIC)	**Order No.:**		**Received:**	Nov 29, 2023 5:29 PM
Address:	Level 22, 570 Bourke Street Melbourne VIC 3000	**Report #:**	1049115	**Due:**	Dec 6, 2023
		Phone:		**Priority:**	5 Day
		Fax:		**Contact Name:**	[redacted]
Project Name:	VIC_0445_PFASOMP_23				

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC200_231128	Nov 28, 2023		Water	M23-No0073198	X
2	0445_QC201_231128	Nov 28, 2023		Water	M23-No0073199	X
Test Counts						2

Stantec Australia Pty Ltd
[redacted]

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1049115-W**
Project name VIC_0445_PFASOMP_23
Received Date Nov 29, 2023

Client Sample ID			**0445_QC200_231128**	**0445_QC201_231128**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**M23-No0073198**	**M23-No0073199**
Date Sampled			**Nov 28, 2023**	**Nov 28, 2023**
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.19	0.28
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.14	0.86
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	[N09]0.27	5.0
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.02	[N09]1.2
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.04	[N09]5.8
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	[N09]< 1
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 1
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	61	85
13C5-PFPeA (surr.)	1	%	82	84
13C5-PFHxA (surr.)	1	%	98	129
13C4-PFHpA (surr.)	1	%	118	88
13C8-PFOA (surr.)	1	%	128	115
13C5-PFNA (surr.)	1	%	134	125
13C6-PFDA (surr.)	1	%	137	124
13C2-PFUnDA (surr.)	1	%	136	83
13C2-PFDoDA (surr.)	1	%	108	87
13C2-PFTeDA (surr.)	1	%	113	119
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	121	109
D3-N-MeFOSA (surr.)	1	%	56	112
D5-N-EtFOSA (surr.)	1	%	58	125

Client Sample ID			0445_QC200_231128	0445_QC201_231128
Sample Matrix			Water	Water
Eurofins Sample No.			M23-No0073198	M23-No0073199
Date Sampled			Nov 28, 2023	Nov 28, 2023
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D7-N-MeFOSE (surr.)	1	%	77	107
D9-N-EtFOSE (surr.)	1	%	68	131
D5-N-EtFOSAA (surr.)	1	%	155	142
D3-N-MeFOSAA (surr.)	1	%	172	133
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	[N09]0.23	[N09]1.8
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	[N09]0.02	< 1
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.14	0.92
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.09	[N09]2.6
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.66	[N09]99
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.04	[N09]20
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]3.3	[N09]480
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 1
13C3-PFBS (surr.)	1	%	104	114
18O2-PFHxS (surr.)	1	%	117	114
13C8-PFOS (surr.)	1	%	101	116
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	1.0
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	0.33
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	152	132
13C2-6:2 FTSA (surr.)	1	%	193	68
13C2-8:2 FTSA (surr.)	1	%	134	148
13C2-10:2 FTSA (surr.)	1	%	125	121
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	3.96	579
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	3.34	485.8
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	4	584.8
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	4.85	595.27
Sum of PFASs (n=30)*	0.1	ug/L	5.14	618.79

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Nov 30, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Nov 30, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Nov 30, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Nov 30, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Nov 29, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

Company Name:	Stantec Australia Pty Ltd (VIC)	**Order No.:**	
Address:	[redacted]	**Report #:**	1049115
		Fax:	
Project Name:	VIC_0445_PFASOMP_23		

Received:	Nov 29, 2023 5:29 PM
Due:	Dec 6, 2023
Contact Name:	[redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC200_231128	Nov 28, 2023		Water	M23-No0073198	X
2	0445_QC201_231128	Nov 28, 2023		Water	M23-No0073199	X
Test Counts						2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg milligrams per kilogram
mg/L milligrams per litre
ppm parts per million
µg/L micrograms per litre
ppb parts per billion
% Percentage
org/100 mL Organisms per 100 millilitres
NTU Nephelometric Turbidity Units
MPN/100 mL Most Probable Number of organisms per 100 millilitres
CFU Colony forming unit
Colour Pt-Co Units

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6 2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term " NT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	68			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	71			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	67			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	63			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	66			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	75			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	69			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	71			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	69			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	52			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	72			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	75			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	78			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	90			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	73			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	72			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	61			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	69			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	72			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	73			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	79			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	66			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	69			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	76			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	69			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	63			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	71			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	72			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	68			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	74			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-No0073198	CP	%	93			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-No0073198	CP	%	58			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-No0073198	CP	%	75			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-No0073198	CP	%	67			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-No0073198	CP	%	72			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-No0073198	CP	%	75			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-No0073198	CP	%	67			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-No0073198	CP	%	68			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-No0073198	CP	%	66			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-No0073337	NCP	%	50			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-No0073198	CP	%	71			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-No0073198	CP	%	70			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-No0073198	CP	%	84			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-No0073198	CP	%	78			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-No0073198	CP	%	68			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-No0073198	CP	%	68			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-No0073198	CP	%	70			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-No0073198	CP	%	71			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-No0073198	CP	%	69			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-No0073198	CP	%	95			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-No0073198	CP	%	57			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-No0073198	CP	%	69			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-No0073198	CP	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-No0073198	CP	%	89			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-No0071777	NCP	%	74			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-No0073198	CP	%	68			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-No0073198	CP	%	69			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-No0073198	CP	%	73			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-No0073198	CP	%	71			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-No0073198	CP	%	66			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-No0073336	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-No0073336	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).



Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Stantec Australia Pty Ltd
[redacted]

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report 1039507-W
Project name
Project ID VIC_0445_PFASOMP
Received Date Oct 30, 2023

Client Sample ID			0445_QC200_20231023	0445_QC201_20231023	0445_QC202_20231023	0445_QC203_20231023
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Oc0071817	M23-Oc0071818	M23-Oc0071819	M23-Oc0071820
Date Sampled			Oct 23, 2023	Oct 23, 2023	Oct 23, 2023	Oct 23, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.06	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.04	0.02	0.11	0.03
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.06	0.02	0.14	0.05
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.02	< 0.01	[N09]0.05	[N09]0.02
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.03	< 0.01	[N09]0.10	[N09]0.03
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.03	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	65	71	71	56
13C5-PFPeA (surr.)	1	%	112	119	109	104
13C5-PFHxA (surr.)	1	%	115	119	109	108
13C4-PFHpA (surr.)	1	%	124	127	117	119
13C8-PFOA (surr.)	1	%	136	138	129	130
13C5-PFNA (surr.)	1	%	123	125	120	120
13C6-PFDA (surr.)	1	%	125	119	118	124
13C2-PFUnDA (surr.)	1	%	116	114	115	126
13C2-PFDoDA (surr.)	1	%	89	96	92	104
13C2-PFTeDA (surr.)	1	%	79	70	94	108
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	111	107	105	109
D3-N-MeFOSA (surr.)	1	%	50	34	27	14

Client Sample ID			0445_QC200_20231023	0445_QC201_20231023	0445_QC202_20231023	0445_QC203_20231023
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Oc0071817	M23-Oc0071818	M23-Oc0071819	M23-Oc0071820
Date Sampled			Oct 23, 2023	Oct 23, 2023	Oct 23, 2023	Oct 23, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	46	31	24	12
D7-N-MeFOSE (surr.)	1	%	68	59	55	60
D9-N-EtFOSE (surr.)	1	%	64	56	51	57
D5-N-EtFOSAA (surr.)	1	%	82	81	85	86
D3-N-MeFOSAA (surr.)	1	%	113	112	108	109
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	[N09]0.03	[N09]0.01	[N09]0.04	[N09]0.02
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.02	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.01	< 0.01	0.02	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.02	< 0.01	[N09]0.04	[N09]0.02
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.16	[N09]0.05	[N09]0.59	[N09]0.23
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.06	[N09]0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.63	[N09]0.16	[N09]2.8	[N09]0.88
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	123	126	113	116
18O2-PFHxS (surr.)	1	%	123	114	96	124
13C8-PFOS (surr.)	1	%	108	112	92	111
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.07	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	117	125	124	116
13C2-6:2 FTSA (surr.)	1	%	121	125	115	111
13C2-8:2 FTSA (surr.)	1	%	82	82	68	78
13C2-10:2 FTSA (surr.)	1	%	70	70	70	81
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.79	0.21	3.39	1.11
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.66	0.16	2.9	0.91
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.82	0.21	3.49	1.14
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.97	0.26	3.96	1.26
Sum of PFASs (n=30)*	0.1	ug/L	1	0.26	4.13	1.29

Client Sample ID			0445_QC204_20231025	0445_QC205_20231024	0445_QC206_20231025	0445_QC207_20231026
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Oc0071821	M23-Oc0071822	M23-Oc0071823	M23-Oc0071824
Date Sampled			Oct 25, 2023	Oct 25, 2023	Oct 25, 2023	Oct 26, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.30
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.44
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	1.8
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]0.31
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]0.61
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	90	100	106	96
13C5-PFPeA (surr.)	1	%	126	135	134	97
13C5-PFHxA (surr.)	1	%	121	131	125	107
13C4-PFHpA (surr.)	1	%	122	148	121	106
13C8-PFOA (surr.)	1	%	126	145	121	99
13C5-PFNA (surr.)	1	%	113	142	117	108
13C6-PFDA (surr.)	1	%	104	157	118	98
13C2-PFUnDA (surr.)	1	%	97	160	131	126
13C2-PFDoDA (surr.)	1	%	83	154	129	125
13C2-PFTeDA (surr.)	1	%	81	141	119	97
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	95	129	124	130
D3-N-MeFOSA (surr.)	1	%	34	80	80	58
D5-N-EtFOSA (surr.)	1	%	30	79	79	50
D7-N-MeFOSE (surr.)	1	%	71	112	110	110
D9-N-EtFOSE (surr.)	1	%	63	106	109	105
D5-N-EtFOSAA (surr.)	1	%	69	138	91	98
D3-N-MeFOSAA (surr.)	1	%	97	163	115	122
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]1.1
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.44
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]1.1
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.03	[N09]7.8
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]0.74
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.14	[N09]9.5
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			0445_QC204_20231025	0445_QC205_20231024	0445_QC206_20231025	0445_QC207_20231026
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Oc0071821	M23-Oc0071822	M23-Oc0071823	M23-Oc0071824
Date Sampled			Oct 25, 2023	Oct 25, 2023	Oct 25, 2023	Oct 26, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	120	131	123	95
18O2-PFHxS (surr.)	1	%	122	134	126	100
13C8-PFOS (surr.)	1	%	109	131	118	87
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.21
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	128	142	109	64
13C2-6:2 FTSA (surr.)	1	%	122	179	113	76
13C2-8:2 FTSA (surr.)	1	%	78	110	119	94
13C2-10:2 FTSA (surr.)	1	%	59	127	92	80
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	0.17	17.3
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.14	10.11
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.17	17.91
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	0.17	22.07
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	0.17	24.36

Client Sample ID			0445_QC208_20231026	0445_QC209_20231026
Sample Matrix			Water	Water
Eurofins Sample No.			M23-Oc0071825	M23-Oc0071826
Date Sampled			Oct 26, 2023	Oct 26, 2023
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.22	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.33	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	1.3	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.24	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.45	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	82	106
13C5-PFPeA (surr.)	1	%	96	135
13C5-PFHxA (surr.)	1	%	101	119
13C4-PFHpA (surr.)	1	%	101	125
13C8-PFOA (surr.)	1	%	98	127
13C5-PFNA (surr.)	1	%	105	123
13C6-PFDA (surr.)	1	%	96	127

Client Sample ID			0445_QC208_20231026	0445_QC209_20231026
Sample Matrix			Water	Water
Eurofins Sample No.			M23-Oc0071825	M23-Oc0071826
Date Sampled			Oct 26, 2023	Oct 26, 2023
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
13C2-PFUnDA (surr.)	1	%	127	131
13C2-PFDoDA (surr.)	1	%	124	118
13C2-PFTeDA (surr.)	1	%	109	101
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	96	115
D3-N-MeFOSA (surr.)	1	%	17	58
D5-N-EtFOSA (surr.)	1	%	17	54
D7-N-MeFOSE (surr.)	1	%	59	90
D9-N-EtFOSE (surr.)	1	%	52	82
D5-N-EtFOSAA (surr.)	1	%	89	94
D3-N-MeFOSAA (surr.)	1	%	117	122
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	[N09]0.87	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.33	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]1.1	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]5.8	[N09]0.02
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.60	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]7.4	[N09]0.04
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	98	121
18O2-PFHxS (surr.)	1	%	102	132
13C8-PFOS (surr.)	1	%	88	129
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	0.18	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	80	96
13C2-6:2 FTSA (surr.)	1	%	79	92
13C2-8:2 FTSA (surr.)	1	%	97	107
13C2-10:2 FTSA (surr.)	1	%	87	87

Client Sample ID			0445_QC208_20231026	0445_QC209_20231026
Sample Matrix			Water	Water
Eurofins Sample No.			M23-Oc0071825	M23-Oc0071826
Date Sampled			Oct 26, 2023	Oct 26, 2023
Test/Reference	LOR	Unit		
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	13.2	0.06
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	7.85	0.04
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	13.65	0.06
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	16.79	0.06
Sum of PFASs (n=30)*	0.1	ug/L	18.82	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Oct 31, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Oct 31, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Oct 31, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Oct 31, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Oct 30, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

[redacted]

Company Name:	Stantec Australia Pty Ltd (VIC)	**Order No.:**		**Received:**	Oct 30, 2023 5:29 PM
Address:	[redacted]	**Report #:**	1039507	**Due:**	Nov 6, 2023
		Phone:		**Priority:**	5 Day
		Fax:		**Contact Name:**	[redacted]
Project Name:					
Project ID:	VIC_0445_PFASOMP				

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0445_QC200_20231023	Oct 23, 2023		Water	M23-Oc0071817	X
2	0445_QC201_20231023	Oct 23, 2023		Water	M23-Oc0071818	X
3	0445_QC202_20231023	Oct 23, 2023		Water	M23-Oc0071819	X
4	0445_QC203_20231023	Oct 23, 2023		Water	M23-Oc0071820	X
5	0445_QC204_20231025	Oct 25, 2023		Water	M23-Oc0071821	X
6	0445_QC205_20231024	Oct 25, 2023		Water	M23-Oc0071822	X
7	0445_QC206_20231025	Oct 25, 2023		Water	M23-Oc0071823	X
8	0445_QC207_20231026	Oct 26, 2023		Water	M23-Oc0071824	X

[redacted]

Company Name:	Stantec Australia Pty Ltd (VIC)	**Order No.:**		**Received:**	Oct 30, 2023 5:29 PM
Address:	[redacted]	**Report #:**	1039507	**Due:**	Nov 6, 2023
		Phone:		**Priority:**	5 Day
		Fax:		**Contact Name:**	[redacted]
Project Name:					
Project ID:	VIC_0445_PFASOMP				

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
9	0445_QC208_20231026	Oct 26, 2023		Water	M23-Oc0071825	X
10	0445_QC209_20231026	Oct 26, 2023		Water	M23-Oc0071826	X
Test Counts						10

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg milligrams per kilogram
mg/L milligrams per litre
µg/L micrograms per litre
ppm parts per million
ppb parts per billion
% Percentage
org/100 mL Organisms per 100 millilitres
NTU Nephelometric Turbidity Units
MPN/100 mL Most Probable Number of organisms per 100 millilitres
CFU Colony forming unit

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6 2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30%; however the following acceptance guidelines are equally

applicable: Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported, have been reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term " NT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	86			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	85			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	85			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	85			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	86			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	98			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	91			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	87			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	88			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	65			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	91			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	95			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	87			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	87			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	87			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	85			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	84			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	90			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	86			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	74			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	82			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	86			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	87			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	99			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorooctanesulfonic acid (PFOS)	M23-Oc0064078	NCP	%	82			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-Oc0071820	CP	%	89			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Oc0071820	CP	%	85			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-Oc0071820	CP	%	91			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Oc0071820	CP	%	86			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-Oc0071820	CP	%	89			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-Oc0071820	CP	%	100			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-Oc0071820	CP	%	92			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Oc0071820	CP	%	93			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Oc0071820	CP	%	94			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Oc0071820	CP	%	67			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Oc0071820	CP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-Oc0071820	CP	%	100			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Oc0071820	CP	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Oc0071820	CP	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Oc0071820	CP	%	91			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Oc0071820	CP	%	92			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Oc0071820	CP	%	89			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Oc0071820	CP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-Oc0071820	CP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Oc0071820	CP	%	100			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Oc0071820	CP	%	75			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Oc0071820	CP	%	79			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Oc0071820	CP	%	79			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Oc0071820	CP	%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Oc0071820	CP	%	90			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Oc0071820	CP	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Oc0071820	CP	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Oc0071820	CP	%	95			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Oc0071820	CP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-Oc0071825	CP	%	86			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Oc0071825	CP	%	58			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Oc0071825	CP	%	76			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-Oc0071825	CP	%	85			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-Oc0071825	CP	%	92			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-Oc0071825	CP	%	84			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Oc0071825	CP	%	85			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Oc0071825	CP	%	89			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Oc0071825	CP	%	61			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Oc0071825	CP	%	85			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-Oc0071825	CP	%	93			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Oc0071825	CP	%	109			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Oc0071825	CP	%	79			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Oc0071825	CP	%	78			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Oc0071825	CP	%	81			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Oc0071825	CP	%	80			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Oc0071825	CP	%	91			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-Oc0071825	CP	%	107			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Oc0071825	CP	%	115			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Oc0071825	CP	%	122			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Oc0071825	CP	%	89			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Oc0071825	CP	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Oc0071825	CP	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Oc0071825	CP	%	87			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Oc0071825	CP	%	92			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorohexanoic acid (PFHxA)	M23-Oc0067961	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluoropentanesulfonic acid (PFPeS)	M23-Oc0067961	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Oc0067961	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-Oc0067961	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-Oc0071824	CP	ug/L	0.30	0.32	7.3	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Oc0071824	CP	ug/L	0.44	0.48	9.4	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Oc0071824	CP	ug/L	0.31	0.32	4.4	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-Oc0071824	CP	ug/L	0.61	0.65	5.8	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-Oc0071824	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Oc0071824	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Oc0071824	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Oc0071824	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Oc0071824	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Oc0071824	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Oc0071824	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-Oc0071824	CP	ug/L	1.1	1.2	7.9	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Oc0071824	CP	ug/L	0.01	0.01	6.4	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Oc0071824	CP	ug/L	0.44	0.50	12	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Oc0071824	CP	ug/L	0.74	0.83	11	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Oc0071824	CP	ug/L	0.21	0.23	8.6	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Oc0071824	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	N/A
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).



Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Cardno

Chain of Custody

Sheet 1 of 1

PM Name: [redacted]
Phone: [redacted]
Address: [redacted]
PM Email [redacted]
Results Email (please email results to all listed): [redacted]
Project Number: VIC_0445_PFASOMP_23
Laboratory (name, phone,fax no & contact person) : ALS (Quote: EM2022MWHAUS0003 - SY/139/19_Bandiana)
Attn [redacted]

	Sample ID	Laboratory ID	Container	Sampling Date	Sampling Time	Sample Matrix: Water	Sediment				Sample preservation: Ice				Analysis: Per- and Polyfluoroalkyl Substances (PFASs) - EP231X										Comments	HOLD
1	0445_MW321_231127		2x bottles	27/11/2023		x					x				x											
2	0445_MW052_231127		2x bottles	27/11/2023		x					x				x											
3	0445_MW051_231128		2x bottles	28/11/2023		x					x				x										Internal lab QC	
4	0445_MW359_231128		2x bottles	28/11/2023		x					x				x											
5	0445_MW321_231128		2x bottles	28/11/2023		x					x				x											
6	0445_MW052_231128		2x bottles	28/11/2023		x					x				x											
7	0445_SW333_231128		2x bottles	28/11/2023		x					x				x										Internal lab QC	
8	0445_SW332_231128		2x bottles	28/11/2023		x					x				x											
9	0445_QC100_231128		2x bottles	28/11/2023		x					x				x											
10	0445_QC101_231128		2x bottles	28/11/2023		x					x				x											
11	0445_QC300_231127		2x bottles	27/11/2023		x					x				x											
12	0445_QC301_231128		2x bottles	28/11/2023		x					x				x											
13	0445_QC500_231128		2x bottles	28/11/2023		x					x				x											

Sampler: I attest that the proper field sampling proceedures were used during the collection of these samples.

Sampler name: (print and signature) [redacted] Date: 28/11/2023

Relinquished by (Sampler): (print and signature) [redacted]	Date	Time	Received by (Courier/Lab): (print and signature)	Date	Time
Relinquished by: (print and signature)	Date	Time	Received by: (print and signature)	Date	Time
Relinquished by: (print and signature)	Date	Time	Received by: [redacted]		

Please supply results electronically in spreadsheet and ESDAT files.
Turn around time: (24 hour/48 hour/3 days/5 days) Please circle

Environmental Division
Melbourne
Work Order Reference
EM2321318
[redacted]

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2321318**	Page	: 1 of 5
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP_23	Date Samples Received	: 29-Nov-2023
Site	: DEF19008	Issue Date	: 06-Dec-2023
Sampler	: ----	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0445_MW321_231127,	0445_MW052_231127	**27-Nov-2023**	**01-Dec-2023**	25-May-2024	✓	**01-Dec-2023**	25-May-2024	✓
HDPE (no PTFE) (EP231X)								
0445_MW051_231128,	0445_MW359_231128,	**28-Nov-2023**	**01-Dec-2023**	26-May-2024	✓	**01-Dec-2023**	26-May-2024	✓
0445_MW321_231128,	0445_MW052_231128,							
0445_SW333_231128,	0445_SW332_231128,							
0445_QC100_231128,	0445_QC101_231128,							
0445_QC300_231127,	0445_QC301_231128,							
0445_QC500_231128								
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0445_MW321_231127,	0445_MW052_231127	**27-Nov-2023**	**01-Dec-2023**	25-May-2024	✓	**01-Dec-2023**	25-May-2024	✓
HDPE (no PTFE) (EP231X)								
0445_MW051_231128,	0445_MW359_231128,	**28-Nov-2023**	**01-Dec-2023**	26-May-2024	✓	**01-Dec-2023**	26-May-2024	✓
0445_MW321_231128,	0445_MW052_231128,							
0445_SW333_231128,	0445_SW332_231128,							
0445_QC100_231128,	0445_QC101_231128,							
0445_QC300_231127,	0445_QC301_231128,							
0445_QC500_231128								
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0445_MW321_231127,	0445_MW052_231127	**27-Nov-2023**	**01-Dec-2023**	25-May-2024	✓	**01-Dec-2023**	25-May-2024	✓
HDPE (no PTFE) (EP231X)								
0445_MW051_231128,	0445_MW359_231128,	**28-Nov-2023**	**01-Dec-2023**	26-May-2024	✓	**01-Dec-2023**	26-May-2024	✓
0445_MW321_231128,	0445_MW052_231128,							
0445_SW333_231128,	0445_SW332_231128,							
0445_QC100_231128,	0445_QC101_231128,							
0445_QC300_231127,	0445_QC301_231128,							
0445_QC500_231128								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0445_MW321_231127, 0445_MW052_231127	**27-Nov-2023**	**01-Dec-2023**	25-May-2024	✓	**01-Dec-2023**	25-May-2024	✓
HDPE (no PTFE) (EP231X)							
0445_MW051_231128, 0445_MW359_231128, 0445_MW321_231128, 0445_MW052_231128, 0445_SW333_231128, 0445_SW332_231128, 0445_QC100_231128, 0445_QC101_231128, 0445_QC300_231127, 0445_QC301_231128, 0445_QC500_231128	**28-Nov-2023**	**01-Dec-2023**	26-May-2024	✓	**01-Dec-2023**	26-May-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0445_MW321_231127, 0445_MW052_231127	**27-Nov-2023**	**01-Dec-2023**	25-May-2024	✓	**01-Dec-2023**	25-May-2024	✓
HDPE (no PTFE) (EP231X)							
0445_MW051_231128, 0445_MW359_231128, 0445_MW321_231128, 0445_MW052_231128, 0445_SW333_231128, 0445_SW332_231128, 0445_QC100_231128, 0445_QC101_231128, 0445_QC300_231127, 0445_QC301_231128, 0445_QC500_231128	**28-Nov-2023**	**01-Dec-2023**	26-May-2024	✓	**01-Dec-2023**	26-May-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within he analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

QUALITY CONTROL REPORT

Work Order	: **EM2321318**	Page	: 1 of 7
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 4, 501 Swanston St, Me bourne, VIC 3000	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP_23	Date Samples Received	: 29-Nov-2023
Order number	: ----	Date Analysis Commenced	: 01-Dec-2023
C-O-C number	: ----	Issue Date	: 06-Dec-2023
Sampler	: ----		
Site	: DEF19008		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	[redacted]
[redacted]	Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5463401)									
EM2321318-003	0445_MW051_231128	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.07	0.07	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.09	0.08	14.8	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EM2321318-007	0445_SW333_231128	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.17	0.18	9.1	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.52	0.49	4.6	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5463401)									
EM2321318-003	0445_MW051_231128	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706 90 3	0 02	µg/L	0 03	0 03	0 0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.06	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5463401) - continued									
EM2321318-003	0445_MW051_231128	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EM2321318-007	0445_SW333_231128	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.06	0.06	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5463401)									
EM2321318-003	0445_MW051_231128	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EM2321318-007	0445_SW333_231128	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5463401)									
EM2321318-003	0445_MW051_231128	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EM2321318-007	0445_SW333_231128	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5463401)									
EM2321318-003	0445_MW051_231128	EP231X: Sum of PFAS	----	0.01	µg/L	0.25	0.25	0.0	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.16	0.15	6.5	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.25	0.25	0.0	0% - 20%
EM2321318-007	0445_SW333_231128	EP231X: Sum of PFAS	----	0.01	µg/L	0.85	0.81	4.8	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.69	0.67	2.9	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.85	0.81	4.8	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5463401)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	94.1	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	97.1	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	94.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	99.0	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	100.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5463401)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	91.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	93.5	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	90.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	97.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	96.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	96.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	90.2	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	98.9	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5463401)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	91.9	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	111	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	94.3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5463401)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5463401) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	101	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	99.8	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	101	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	80.4	70.0	130
EP231P: PFAS Sums (QCLot: 5463401)								
EP231X: Sum of PFAS	---	0.01	µg/L	<0.01	---	---	---	---
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	---	---	---	---
EP231X: Sum of PFAS (WA DER List)	---	0.01	µg/L	<0.01	---	---	---	---

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5463401)							
EM2321318-003	0445_MW051_231128	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	116	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	93 5	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	101	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	108	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	94.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	80 9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5463401)							
EM2321318-003	0445_MW051_231128	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88 8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	89 5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	92 9	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	94.1	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	91 0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	87 9	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	84.6	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	73 8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	66.7	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	79.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5463401)							

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5463401) - continued							
EM2321318-003	0445_MW051_231128	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	81 9	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	91 5	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	85 8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	88 2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	71 2	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	71 3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5463401)							
EM2321318-003	0445_MW051_231128	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	99 3	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	99 0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	95 2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	77 2	70.0	130

CERTIFICATE OF ANALYSIS

Work Order	: **EM2321318**	Page	: 1 of 9
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 4, 501 Swanston St, Melbourne, VIC 3000	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP_23	Date Samples Received	: 29-Nov-2023 11:50
Order number	: ----	Date Analysis Commenced	: 01-Dec-2023
C-O-C number	: ----	Issue Date	: 06-Dec-2023 10:33
Sampler	: ----		
Site	: DEF19008		
Quote number	: SY/139/19_Bandiana		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist Senior Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at ini ial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445_MW321_231127	0445_MW052_231127	0445_MW051_231128	0445_MW359_231128	0445_MW321_231128
				Sampling date / time	27-Nov-2023 00:00	27-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00
Compound	CAS Number	LOR	Unit		EM2321318-001	EM2321318-002	EM2321318-003	EM2321318-004	EM2321318-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**2.38**	**1.37**	<0.02	<0.02	**3.89**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**3.91**	**1.44**	<0.02	<0.02	**8.84**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**117**	**7.54**	**0.07**	**0.15**	**164**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**31.4**	**0.50**	<0.02	<0.02	**40.6**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**491**	**8.59**	**0.09**	**0.11**	**820**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375 22 4	0.1	µg/L		**0.3**	**0.3**	<0.1	<0.1	**0.4**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.96**	**0.42**	**0.03**	<0.02	**1.62**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**6.08**	**2.12**	**0.05**	<0.02	**11.0**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.42**	**0.54**	<0.02	<0.02	**2.14**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**9.16**	**0.78**	**0.01**	<0.01	**11.2**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**1.27**	<0.02	<0.02	<0.02	**2.24**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.04**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445_MW321_231127	0445_MW052_231127	0445_MW051_231128	0445_MW359_231128	0445_MW321_231128
				Sampling date / time	27-Nov-2023 00:00	27-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00
Compound	CAS Number	LOR	Unit		EM2321318-001	EM2321318-002	EM2321318-003	EM2321318-004	EM2321318-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**1.14**	<0.05	<0.05	<0.05	**1.68**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		**0.62**	<0.05	<0.05	<0.05	**1.46**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**667**	**23.6**	**0.25**	**0.26**	**1070**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**608**	**16.1**	**0.16**	**0.26**	**984**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**630**	**21.7**	**0.25**	**0.26**	**1020**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**116**	**102**	**99.9**	**103**	**100.0**
13C8-PFOA	---	0.02	%		**107**	**102**	**105**	**108**	**106**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445_MW052_231128	0445_SW333_231128	0445_SW332_231128	0445_QC100_231128	0445_QC101_231128
				Sampling date / time	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00
Compound	CAS Number	LOR	Unit		EM2321318-006	EM2321318-007	EM2321318-008	EM2321318-009	EM2321318-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.51**	**0.05**	**0.28**	**0.27**	**2.28**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.72**	<0.02	**0.12**	**0.12**	**5.21**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**9.49**	**0.17**	**0.78**	**0.74**	**115**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.68**	<0.02	**0.05**	**0.04**	**31.7**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**10.4**	**0.52**	**3.52**	**3.22**	**455**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375 22 4	0.1	µg/L		**0.3**	<0.1	**0.2**	**0.2**	**0.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.44**	**0.03**	**0.16**	**0.16**	**0.93**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.33**	**0.06**	**0.33**	**0.34**	**5.78**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.61**	<0.02	**0.02**	**0.02**	**1.32**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.92**	**0.02**	**0.06**	**0.05**	**7.68**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**1.09**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445_MW052_231128	0445_SW333_231128	0445_SW332_231128	0445_QC100_231128	0445_QC101_231128
				Sampling date / time	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00
Compound	CAS Number	LOR	Unit		EM2321318-006	EM2321318-007	EM2321318-008	EM2321318-009	EM2321318-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**1.06**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.59**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**28.4**	**0.85**	**5.52**	**5.16**	**628**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**19.9**	**0.69**	**4.30**	**3.96**	**570**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**26.0**	**0.85**	**5.35**	**5.00**	**590**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**104**	**99.4**	**108**	**106**	**110**
13C8-PFOA	---	0.02	%		**106**	**102**	**103**	**103**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0445_QC300_231127	0445_QC301_231128	0445_QC500_231128	----	----
			Sampling date / time	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2321318-011	EM2321318-012	EM2321318-013	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445_QC300_231127	0445_QC301_231128	0445_QC500_231128	----	----
				Sampling date / time	28-Nov-2023 00:00	28-Nov-2023 00:00	28-Nov-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2321318-011	EM2321318-012	EM2321318-013	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.7**	**105**	**103**	----	----
13C8-PFOA	----	0.02	%		**104**	**102**	**103**	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

CERTIFICATE OF ANALYSIS

Work Order	: **EM23183UP**	Page	: 1 of 9
Client	: **STANTEC ADSTRALIA i TY LTt**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
AAAress	: [redacted]	AAAress	: [redacted]
Telej _one	: ffff	Telej _one	: [redacted]
Pro@ct	: dhCY0882YP5Aw3 MPY43	Date wamj les SeceiveA	: 30F3 ctF4043 11:49
3 rAer number	: F	Date Analysis CommenceA	: 30F3 ctF4043
CF3 FC number	: 2N013	hssue Date	: 04Fp ovF4043 13:00
wamj ler	: [redacted]		
wite	: dhCY0882YP5Aw3 MPY43		
(uote number	: w) xl3Nxl NYLaverton		
p o. of samj les receiveA	: 6		
p o. of samj les analyseA	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

T_is rej ort suj erseAes any j revious rej ortzs) wit_ t_is reference. Sesults aj j ly to t_e samj lezs) as submitteA- unless t_e samj ling was conAucteA by ALw. T_is Aocument s_all not be rej roAuceA- excej t in full.

T_is Certificate of Analysis contains t_e following information:

- General Comments
- Analytical Sesults
- wurrogate Control Limits

Addraol f m rl porh fael seral el a ao awb resora u mm ge pocl d rl ave pomou rl Q besf rf æ f æfywh el ab: , cf ma Col arom Resorav , A., C Coh smf l ye Abbebbh el a ao f bbrba u rav , cf ma Revreu f l d Sf h sra Reyers a Noapy f ael .

Signatories

T_is Aocument _as been electronically signeA by t_e aut_orizeA signatories below. Electronic signing is carrieA out in comj liance wit_ j roceAures sj ecifieA in 41 C5S Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	4hC 3 rganic C_emist wenior 3 rganic C_emist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2319355-001 due to sample matrix interference.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at ini ial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW396_20231027	0445_SW397_20231025	0445_SW400_20231025	0445_SW401_20231025	0445_SW471_20231025
			Sampling date / time	27-Oct-2023 11:44	25-Oct-2023 07:42	25-Oct-2023 08:07	25-Oct-2023 07:54	25-Oct-2023 07:44
Compound	CAS Number	LOR	Unit	EM2319357-001	EM2319357-002	EM2319357-003	EM2319357-004	EM2319357-005
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.17	0.52	0.17	0.13	0.25
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.14	0.54	0.14	0.10	0.19
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	1.30	3.70	1.00	0.68	1.38
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.04	0.24	0.05	0.03	0.08
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.67	3.09	0.57	0.40	0.96
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.06	0.21	0.06	0.04	0.07
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.17	0.84	0.20	0.13	0.28
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.03	0.16	0.04	0.03	0.05
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.05	0.26	0.06	0.04	0.08
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW396_20231027	0445_SW397_20231025	0445_SW400_20231025	0445_SW401_20231025	0445_SW471_20231025
				Sampling date / time	27-Oct-2023 11:44	25-Oct-2023 07:42	25-Oct-2023 08:07	25-Oct-2023 07:54	25-Oct-2023 07:44
Compound	CAS Number	LOR	Unit		EM2319357-001	EM2319357-002	EM2319357-003	EM2319357-004	EM2319357-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**2.63**	**9.56**	**2.29**	**1.58**	**3.34**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.97**	**6.79**	**1.57**	**1.08**	**2.34**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**2.45**	**8.78**	**2.10**	**1.45**	**3.07**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**104**	**106**	**99.2**	**98.9**	**107**
13C8-PFOA	---	0.02	%		**103**	**102**	**107**	**104**	**105**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW487_20231025	----	----	----	----
				Sampling date / time	25-Oct-2023 07:41	---	---	---	---
Compound	CAS Number	LOR	Unit		EM2319357-006	--------	--------	--------	--------
					Result	---	---	---	---
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.47**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.51**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355 46 4	0.01	µg/L		**3.48**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375 92 8	0.02	µg/L		**0.24**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.90**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.21**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.82**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.15**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.26**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW487_20231025	----	----	----	----
			Sampling date / time		25-Oct-2023 07:41	---	---	---	---
Compound	CAS Number	LOR	Unit		EM2319357-006	--------	--------	--------	--------
					Result	---	---	---	---
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		9.04	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		6.38	----	----	----	----
Sum of PFAS (WA DER List)	---	0.01	µg/L		8.29	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		101	----	----	----	----
13C8-PFOA	---	0.02	%		101	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SURFACE WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	---	65	140
13C8-PFOA	---	71	133

CERTIFICATE OF ANALYSIS

Work Order	: **EM2319356-AA**	Page	: 1 of 35
Amendment	: **1**		
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: LEVEL 21 28 FRESHWATER PLACE SOUTHBANK VIC, AUSTRALIA 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +[redacted]
Project	: VIC_0445_PFASOMP_24	Date Samples Received	: 30-Oct-2023 11:27
Order number	: -	Date Analysis Commenced	: 30-Oct-2023
C-O-C number	: 59011	Issue Date	: 20-Feb-2024 08:52
Sampler	: [redacted]		
Site	: VIC_0445_PFASOMP_23		
Quote number	: SY/139/19_Laverton		
No. of samples received	: 71		
No. of samples analysed	: 71		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2319356-042 due to sample matrix interference.
- EP231X: Samples required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- Amendment (20/2/24):This report has been amended following a request from Maya.B on 19/2/24 to create a split report for sample 0445_MW056_20231025 (#10). All results unchanged.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW311_20231026	0445_MW304_20231026	0445_MW312_20231026	0445_MW051_20231025	0445_MW416_20231025
				Sampling date / time	27-Oct-2023 12:17	26-Oct-2023 14:22	26-Oct-2023 14:24	25-Oct-2023 07:52	25-Oct-2023 07:51
Compound	CAS Number	LOR	Unit		EM2319356-001	EM2319356-002	EM2319356-003	EM2319356-004	EM2319356-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	<0.01	**0.24**	**0.05**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	<0.01	**0.13**	**0.08**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.04**	**0.03**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.01**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW311_20231026	0445_MW304_20231026	0445_MW312_20231026	0445_MW051_20231025	0445_MW416_20231025
				Sampling date / time	27-Oct-2023 12:17	26-Oct-2023 14:22	26-Oct-2023 14:24	25-Oct-2023 07:52	25-Oct-2023 07:51
Compound	CAS Number	LOR	Unit		EM2319356-001	EM2319356-002	EM2319356-003	EM2319356-004	EM2319356-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**0.04**	<0.01	**0.48**	**0.16**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.04**	<0.01	**0.37**	**0.13**	<0.01
Sum of PFAS (WA DER List)	---	0.01	µg/L		**0.04**	<0.01	**0.45**	**0.16**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**115**	**123**	**111**	**118**	**123**
13C8-PFOA	---	0.02	%		**102**	**101**	**103**	**100**	**101**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW323_20231025	0445_MW329_20231025	0445_MW319_20231025	0445_MW321_20231025	0445_MW342_20231026
			Sampling date / time	25-Oct-2023 08:05	25-Oct-2023 07:55	25-Oct-2023 07:49	25-Oct-2023 07:50	26-Oct-2023 14:09
Compound	CAS Number	LOR	Unit	EM2319356-006	EM2319356-007	EM2319356-008	EM2319356-009	EM2319356-011
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.14**	<0.02	**3.40**	**0.30**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.09**	<0.02	**6.08**	**0.30**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	**0.36**	**0.04**	**195**	**2.28**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	**59.5**	**0.11**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	**0.06**	**0.18**	**983**	**3.37**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	**0.2**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	**1.66**	**0.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	**11.2**	**0.36**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	**2.18**	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	**11.6**	**0.09**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	**1.96**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.09	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.04	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.09	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW323_20231025	0445_MW329_20231025	0445_MW319_20231025	0445_MW321_20231025	0445_MW342_20231026
				Sampling date / time	25-Oct-2023 08:05	25-Oct-2023 07:55	25-Oct-2023 07:49	25-Oct-2023 07:50	26-Oct-2023 14:09
Compound	CAS Number	LOR	Unit		EM2319356-006	EM2319356-007	EM2319356-008	EM2319356-009	EM2319356-011
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	1.72	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	1.85	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		<0.01	0.65	0.22	1280	6.92
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	0.42	0.22	1180	5.65
Sum of PFAS (WA DER List)	---	0.01	µg/L		<0.01	0.56	0.22	1210	6.51
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		126	109	112	88.7	123
13C8-PFOA	---	0.02	%		102	100	102	109	102

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW345_20231026	0445_MW346_20231026	0445_MW052_20231025	0445_MW403_202310 2	0445_MW404_20231025
			Sampling date / time	26-Oct-2023 14:04	26-Oct-2023 14:03	25-Oct-2023 07:38	26-Oct-2023 14:11	26-Oct-2023 07:38
Compound	CAS Number	LOR	Unit	EM2319356-012	EM2319356-013	EM2319356-014	EM2319356-015	EM2319356-016
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.06**	<0.02	**15.1**	**7.80**	**13.9**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.04**	<0.02	**19.5**	**10.2**	**16.8**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.24**	<0.01	**143**	**62.2**	**110**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	**6.87**	**2.73**	**6.86**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.10**	<0.01	**31.2**	**40.8**	**104**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	**0.03**	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	**2.0**	**1.8**	**2.6**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**4.00**	**3.34**	**5.10**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	**23.4**	**14.4**	**25.1**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	**5.31**	**2.04**	**5.41**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**10.6**	**3.55**	**10.3**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	**0.02**	**0.04**	**0.05**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW345_20231026	0445_MW346_20231026	0445_MW052_20231025	0445_MW403_202310 2	0445_MW404_20231025
				Sampling date / time	26-Oct-2023 14:04	26-Oct-2023 14:03	25-Oct-2023 07:38	26-Oct-2023 14:11	26-Oct-2023 07:38
Compound	CAS Number	LOR	Unit		EM2319356-012	EM2319356-013	EM2319356-014	EM2319356-015	EM2319356-016
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	0.68	0.10
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		0.44	<0.01	261	150	300
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		0.34	<0.01	174	103	214
Sum of PFAS (WA DER List)	---	0.01	µg/L		0.40	<0.01	235	137	276
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		110	130	103	121	109
13C8-PFOA	---	0.02	%		100.0	101	97.4	102	100

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW350_S_20231025	0445_MW350_D_20231025	0445_MW009_20231026	0445_MW016_20231026	0445_MW042_20231026
			Sampling date / time	25-Oct-2023 07:36	25-Oct-2023 07:36	26-Oct-2023 14:25	26-Oct-2023 14:18	26-Oct-2023 14:22
Compound	CAS Number	LOR	Unit	EM2319356-017	EM2319356-018	EM2319356-019	EM2319356-020	EM2319356-021
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	2.64	0.07	1.35	0.52	1.00
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	4.52	0.03	1.55	0.54	1.08
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	71.4	0.30	10.2	3.66	6.87
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	5.47	0.02	0.81	0.36	0.61
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	69.1	0.43	9.98	6.78	7.94
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	1.0	<0.1	0.3	<0.1	0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	2.58	<0.02	0.60	0.19	0.40
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	9.98	0.06	2.57	0.94	1.72
Perfluoroheptanoic acid (PFHpA)	375 85 9	0.02	µg/L	1.54	<0.02	0.38	0.19	0.28
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	5.64	0.02	0.71	0.37	0.50
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.06	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW350_S_20231025	0445_MW350_D_20231025	0445_MW009_20231026	0445_MW016_20231026	0445_MW042_20231026
				Sampling date / time	25-Oct-2023 07:36	25-Oct-2023 07:36	26-Oct-2023 14:25	26-Oct-2023 14:18	26-Oct-2023 14:22
Compound	CAS Number	LOR	Unit		EM2319356-017	EM2319356-018	EM2319356-019	EM2319356-020	EM2319356-021
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**2.38**	<0.05	**0.28**	<0.05	**0.24**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**176**	**0.93**	**28.7**	**13.6**	**20.8**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**140**	**0.73**	**20.2**	**10.4**	**14.8**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**166**	**0.88**	**26.4**	**12.6**	**19.2**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**103**	**106**	**110**	**109**	**120**
13C8-PFOA	---	0.02	%		**95.0**	**112**	**112**	**112**	**110**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW043_20231026	0445_MW035_20231026	0445_MW034_20231026	0445_MW046I_20231026	0445_MW046_D_20231026
			Sampling date / time	26-Oct-2023 14:23	26-Oct-2023 14:28	26-Oct-2023 14:05	26-Oct-2023 14:05	26-Oct-2023 14:09
Compound	CAS Number	LOR	Unit	EM2319356-022	EM2319356-023	EM2319356-024	EM2319356-025	EM2319356-026
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.70	1.08	0.04	0.15	0.15
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.74	1.24	0.04	0.15	0.17
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	4.74	7.21	0.51	1.66	1.80
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.46	0.58	0.04	0.10	0.11
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	6.46	8.75	0.85	2.48	2.46
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.1	0.2	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.30	0.40	<0.02	0.05	0.05
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.22	1.71	0.07	0.26	0.26
Perfluoroheptanoic acid (PFHpA)	375 85 9	0.02	µg/L	0.20	0.30	<0.02	0.03	0.03
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.37	0.53	0.03	0.08	0.08
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW043_20231026	0445_MW035_20231026	0445_MW034_20231026	0445_MW046I_20231026	0445_MW046_D_20231026
				Sampling date / time	26-Oct-2023 14:23	26-Oct-2023 14:28	26-Oct-2023 14:05	26-Oct-2023 14:05	26-Oct-2023 14:09
Compound	CAS Number	LOR	Unit		EM2319356-022	EM2319356-023	EM2319356-024	EM2319356-025	EM2319356-026
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.19**	**0.20**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**15.5**	**22.2**	**1.58**	**4.96**	**5.11**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**11.2**	**16.0**	**1.36**	**4.14**	**4.26**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**14.3**	**20.4**	**1.50**	**4.71**	**4.83**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**109**	**118**	**106**	**111**	**113**
13C8-PFOA	---	0.02	%		**113**	**98.4**	**111**	**112**	**113**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_MW018_20231026	0445_MW020_20231026	0445_MW012_20231026	0445_MW029_20231026	0445_MW352_20231025
			Sampling date / time	26-Oct-2023 14:10	26-Oct-2023 14:01	26-Oct-2023 14:11	26-Oct-2023 14:13	25-Oct-2023 07:39
Compound	CAS Number	LOR	Unit	EM2319356-027	EM2319356-028	EM2319356-029	EM2319356-030	EM2319356-031
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.09**	**0.09**	<0.02	**0.10**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.05**	**0.11**	<0.02	**0.10**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.42**	**1.78**	**0.24**	**0.58**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.09**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.39**	**1.00**	**0.17**	**0.37**	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	**0.04**	<0.02	**0.12**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.19**	<0.02	**0.25**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.02**	<0.02	**0.07**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	**0.06**	<0.01	**0.04**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW018_20231026	0445_MW020_20231026	0445_MW012_20231026	0445_MW029_20231026	0445_MW352_20231025
				Sampling date / time	26-Oct-2023 14:10	26-Oct-2023 14:01	26-Oct-2023 14:11	26-Oct-2023 14:13	25-Oct-2023 07:39
Compound	CAS Number	LOR	Unit		EM2319356-027	EM2319356-028	EM2319356-029	EM2319356-030	EM2319356-031
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**0.95**	**3.38**	**0.41**	**1.63**	**0.01**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.81**	**2.78**	**0.41**	**0.95**	**0.01**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**0.90**	**3.18**	**0.41**	**1.53**	**0.01**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**105**	**110**	**122**	**105**	**108**
13C8-PFOA	---	0.02	%		**112**	**110**	**102**	**111**	**109**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_20231026	0445_MW354_20231026	0445_MW351_20231025	0445_MW307_20231026	0445_QC105_20231025
				Sampling date / time	26-Oct-2023 14:08	26-Oct-2023 14:06	25-Oct-2023 07:35	26-Oct-2023 14:27	25-Oct-2023 07:45
Compound	CAS Number	LOR	Unit		EM2319356-032	EM2319356-033	EM2319356-034	EM2319356-035	EM2319356-058
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**2.97**	<0.02	<0.02	**91.3**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.43**	<0.02	<0.02	**85.6**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**14.2**	**0.03**	**0.02**	**479**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.81**	<0.02	<0.02	**40.4**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**4.60**	**0.05**	**0.02**	**101**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.2**	<0.1	<0.1	**9.7**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.89**	<0.02	<0.02	**60.6**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.42**	<0.02	<0.02	**143**	<0.02
Perfluoroheptanoic acid (PFHpA)	375 85 9	0.02	µg/L		**0.56**	<0.02	<0.02	**28.1**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.67**	<0.01	<0.01	**42.2**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.66**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW353_20231026	0445_MW354_20231026	0445_MW351_20231025	0445_MW307_20231026	0445_QC105_20231025
				Sampling date / time	26-Oct-2023 14:08	26-Oct-2023 14:06	25-Oct-2023 07:35	26-Oct-2023 14:27	25-Oct-2023 07:45
Compound	CAS Number	LOR	Unit		EM2319356-032	EM2319356-033	EM2319356-034	EM2319356-035	EM2319356-058
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	0.90	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	103	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		29.8	0.08	0.04	1180	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		18.8	0.08	0.04	580	<0.01
Sum of PFAS (WA DER List)	---	0.01	µg/L		26.5	0.08	0.04	1060	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		120	115	116	98.1	109
13C8-PFOA	---	0.02	%		116	110	113	92.7	102

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)			Sample ID	0445_QC106_20231025	0445_QC109_20231026	0445_QC108_20231026	0445_QC107_20231026	----
			Sampling date / time	25-Oct-2023 07:59	26-Oct-2023 14:02	26-Oct-2023 14:17	26-Oct-2023 14:26	----
Compound	CAS Number	LOR	Unit	EM2319356-064	EM2319356-065	EM2319356-066	EM2319356-069	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	**0.93**	**1.24**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	**1.05**	**1.30**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.04**	**0.04**	**6.48**	**8.35**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	**0.53**	**0.70**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.17**	**0.05**	**7.03**	**8.79**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	**0.2**	**0.2**	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**0.37**	**0.52**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	**1.59**	**2.31**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	**0.26**	**0.34**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**0.46**	**0.63**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_QC106_20231025	0445_QC109_20231026	0445_QC108_20231026	0445_QC107_20231026	----
				Sampling date / time	25-Oct-2023 07:59	26-Oct-2023 14:02	26-Oct-2023 14:17	26-Oct-2023 14:26	----
Compound	CAS Number	LOR	Unit		EM2319356-064	EM2319356-065	EM2319356-066	EM2319356-069	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**0.21**	**0.25**	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.21**	**0.09**	**19.1**	**24.6**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.21**	**0.09**	**13.5**	**17.1**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.21**	**0.09**	**17.5**	**22.6**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**108**	**103**	**105**	**98.9**	----
13C8-PFOA	----	0.02	%		**103**	**98.7**	**103**	**99.6**	----

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)				Sample ID	0445_QC302_20231024	0445_QC300_20231023	0445_QC304_20231025	0445_QC306_20231026	0445_QC308_20231027
				Sampling date / time	24-Oct-2023 07:47	23-Oct-2023 07:57	25-Oct-2023 07:58	26-Oct-2023 14:21	27-Oct-2023 11:56
Compound	CAS Number	LOR	Unit		EM2319356-059	EM2319356-061	EM2319356-063	EM2319356-067	EM2319356-071
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)				Sample ID	0445_QC302_20231024	0445_QC300_20231023	0445_QC304_20231025	0445_QC306_20231026	0445_QC308_20231027
				Sampling date / time	24-Oct-2023 07:47	23-Oct-2023 07:57	25-Oct-2023 07:58	26-Oct-2023 14:21	27-Oct-2023 11:56
Compound	CAS Number	LOR	Unit		EM2319356-059	EM2319356-061	EM2319356-063	EM2319356-067	EM2319356-071
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	---	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**97.2**	**102**	**103**	**104**	**106**
13C8-PFOA	---	0.02	%		**101**	**97.8**	**102**	**102**	**99.3**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW313_20231023	0445_SW321_20231023	0445_SW322_20231023	0445_SW323_20231023	0445_SW324_20231026
				Sampling date / time	23-Oct-2023 08:04	24-Oct-2023 08:07	23-Oct-2023 08:06	23-Oct-2023 08:04	26-Oct-2023 14:19
Compound	CAS Number	LOR	Unit		EM2319356-036	EM2319356-037	EM2319356-038	EM2319356-039	EM2319356-040
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.21**	**0.03**	**0.02**	<0.02	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.17**	<0.02	**0.02**	**0.02**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**2.39**	**0.41**	**0.37**	**0.27**	**0.30**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.07**	**0.03**	<0.02	<0.02	**0.02**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.14**	**3.10**	**3.00**	**1.02**	**2.04**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.79**	<0.02	<0.02	**0.04**	**0.07**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.10**	**0.05**	**0.05**	**0.06**	**0.10**
Perfluoroheptanoic acid (PFHpA)	375 85 9	0.02	µg/L		**0.14**	<0.02	<0.02	**0.02**	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.19**	**0.02**	**0.02**	**0.03**	**0.06**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.11**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW313_20231023	0445_SW321_20231023	0445_SW322_20231023	0445_SW323_20231023	0445_SW324_20231026
				Sampling date / time	23-Oct-2023 08:04	24-Oct-2023 08:07	23-Oct-2023 08:06	23-Oct-2023 08:04	26-Oct-2023 14:19
Compound	CAS Number	LOR	Unit		EM2319356-036	EM2319356-037	EM2319356-038	EM2319356-039	EM2319356-040
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**8.61**	**3.64**	**3.48**	**1.46**	**2.66**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**5.53**	**3.51**	**3.37**	**1.29**	**2.34**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**8.26**	**3.61**	**3.46**	**1.44**	**2.64**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**105**	**113**	**102**	**98.0**	**90.2**
13C8-PFOA	---	0.02	%		**108**	**111**	**103**	**99.6**	**103**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW326_20231023	0445_SW336_20231027	0445_SW338_20231025	0445_SW340_20231025	0445_SW346_20231025
				Sampling date / time	23-Oct-2023 08:07	27-Oct-2023 11:48	25-Oct-2023 08:02	25-Oct-2023 08:00	25-Oct-2023 08:03
Compound	CAS Number	LOR	Unit		EM2319356-041	EM2319356-042	EM2319356-043	EM2319356-044	EM2319356-045
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		0.05	0.22	0.04	0.04	0.08
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		0.04	0.23	0.03	0.04	0.04
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		0.59	2.08	0.22	0.48	0.36
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		0.06	0.20	<0.02	0.02	0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		2.62	13.8	0.98	2.01	1.14
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	0.44	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	0.3	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		0.10	0.71	0.05	0.14	0.09
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		0.17	1.77	0.13	0.18	0.11
Perfluoroheptanoic acid (PFHpA)	375 85 9	0.02	µg/L		0.06	0.55	0.02	0.12	0.04
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		0.11	1.17	0.04	0.16	0.06
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		0.03	0.42	<0.02	0.06	0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	0.28	<0.02	0.04	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	0.13	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	0.07	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	0.04	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW326_20231023	0445_SW336_20231027	0445_SW338_20231025	0445_SW340_20231025	0445_SW346_20231025
				Sampling date / time	23-Oct-2023 08:07	27-Oct-2023 11:48	25-Oct-2023 08:02	25-Oct-2023 08:00	25-Oct-2023 08:03
Compound	CAS Number	LOR	Unit		EM2319356-041	EM2319356-042	EM2319356-043	EM2319356-044	EM2319356-045
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.07**	**1.09**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	**0.96**	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	**0.32**	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**3.90**	**24.8**	**1.51**	**3.29**	**1.96**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**3.21**	**15.9**	**1.20**	**2.49**	**1.50**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**3.77**	**22.6**	**1.48**	**3.13**	**1.88**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**98.2**	**104**	**103**	**98.7**	**104**
13C8-PFOA	---	0.02	%		**98.6**	**104**	**100**	**106**	**98.4**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW349_20231023	0445_SW355_20231023	0445_SW370_20231026	0445_SW374_20231026	0445_SW375_20231026
				Sampling date / time	23-Oct-2023 08:13	23-Oct-2023 08:14	26-Oct-2023 14:07	26-Oct-2023 14:00	26-Oct-2023 14:14
Compound	CAS Number	LOR	Unit		EM2319356-046	EM2319356-047	EM2319356-048	EM2319356-049	EM2319356-050
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.19**	**0.06**	**0.05**	**0.04**	**0.03**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.67**	**0.21**	**0.11**	**0.09**	**0.09**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.05**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.08**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375 85 9	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.04**	**0.01**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW349_20231023	0445_SW355_20231023	0445_SW370_20231026	0445_SW374_20231026	0445_SW375_20231026
				Sampling date / time	23-Oct-2023 08:13	23-Oct-2023 08:14	26-Oct-2023 14:07	26-Oct-2023 14:00	26-Oct-2023 14:14
Compound	CAS Number	LOR	Unit		EM2319356-046	EM2319356-047	EM2319356-048	EM2319356-049	EM2319356-050
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**1.12**	**0.28**	**0.16**	**0.13**	**0.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.86**	**0.27**	**0.16**	**0.13**	**0.12**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**1.09**	**0.28**	**0.16**	**0.13**	**0.12**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**106**	**104**	**91.4**	**101**	**107**
13C8-PFOA	---	0.02	%		**103**	**104**	**98.2**	**98.0**	**103**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW382_20231025	0445_SW387_20231027	0445_QC103_20231023	0445_QC102_20231023	0445_QC100_20231023
			Sampling date / time	25-Oct-2023 07:40	27-Oct-2023 11:50	23-Oct-2023 08:05	23-Oct-2023 08:09	23-Oct-2023 08:13
Compound	CAS Number	LOR	Unit	EM2319356-051	EM2319356-052	EM2319356-053	EM2319356-054	EM2319356-055
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.04**	<0.02	**0.04**	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	**0.04**	**0.02**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	**0.15**	**0.26**	**0.63**	**0.21**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	**0.06**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	**0.14**	**1.08**	**2.68**	**0.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**0.04**	**0.11**	**0.06**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	**0.07**	**0.18**	**0.08**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	**0.02**	**0.06**	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**0.04**	**0.12**	**0.04**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	**0.03**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW382_20231025	0445_SW387_20231027	0445_QC103_20231023	0445_QC102_20231023	0445_QC100_20231023
				Sampling date / time	25-Oct-2023 07:40	27-Oct-2023 11:50	23-Oct-2023 08:05	23-Oct-2023 08:09	23-Oct-2023 08:13
Compound	CAS Number	LOR	Unit		EM2319356-051	EM2319356-052	EM2319356-053	EM2319356-054	EM2319356-055
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	0.08	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		<0.01	0.33	1.51	4.03	1.12
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	0.29	1.34	3.31	0.85
Sum of PFAS (WA DER List)	---	0.01	µg/L		<0.01	0.33	1.51	3.90	1.10
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		91.1	91.9	103	101	97.6
13C8-PFOA	---	0.02	%		99.3	100	107	102	100

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_QC101_20231023	0445_QC104_20231025	----	----	----
			Sampling date / time	23-Oct-2023 08:15	25-Oct-2023 07:37	---	---	---
Compound	CAS Number	LOR	Unit	EM2319356-056	EM2319356-057	--------	--------	--------
				Result	Result	---	---	---
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.06**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.22**	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.02**	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_QC101_20231023	0445_QC104_20231025	----	----	----
				Sampling date / time	23-Oct-2023 08:15	25-Oct-2023 07:37	---	---	---
Compound	CAS Number	LOR	Unit		EM2319356-056	EM2319356-057	--------	--------	--------
					Result	Result	---	---	---
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.30**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.28**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.30**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**107**	----	----	----
13C8-PFOA	----	0.02	%		**101**	**102**	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)				Sample ID	0445_WWDRUM01_20231027	----	----	----	----
				Sampling date / time	27-Oct-2023 11:54	---	---	---	---
Compound	CAS Number	LOR	Unit	EM2319356-070	--------	--------	--------	--------	
				Result	---	---	---	---	
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**2.12**	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**2.03**	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**12.8**	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**1.10**	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**7.92**	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----	
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.3**	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**1.11**	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**3.63**	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.59**	----	----	----	----	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.95**	----	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----	
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----	

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)				Sample ID	0445_WWDRUM01_20231027	----	----	----	----
			Sampling date / time		27-Oct-2023 11:54	---	---	---	---
Compound	CAS Number	LOR	Unit		EM2319356-070	--------	--------	--------	--------
					Result	---	---	---	---
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.80**	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**33.4**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**20.7**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**30.2**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**115**	----	----	----	----
13C8-PFOA	----	0.02	%		**100**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0445_QC501_20231027	0445_QC502_20231227	0445_QC503_20231027	0445_QC500_20231027	----
			Sampling date / time	27-Oct-2023 12:23	27-Oct-2023 12:24	27-Oct-2023 12:25	27-Oct-2023 12:25	----
Compound	CAS Number	LOR	Unit	EM2319356-073	EM2319356-074	EM2319356-075	EM2319356-076	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0445_QC501_20231027	0445_QC502_20231227	0445_QC503_20231027	0445_QC500_20231027	----
				Sampling date / time	27-Oct-2023 12:23	27-Oct-2023 12:24	27-Oct-2023 12:25	27-Oct-2023 12:25	----
Compound	CAS Number	LOR	Unit		EM2319356-073	EM2319356-074	EM2319356-075	EM2319356-076	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**106**	**97.8**	**98.6**	----
13C8-PFOA	----	0.02	%		**101**	**105**	**98.9**	**102**	----

Surrogate Control Limits

Sub-Matrix: GROUNDWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	---	65	140
13C8-PFOA	---	71	133

Sub-Matrix: RINSATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	---	65	140
13C8-PFOA	---	71	133

Sub-Matrix: SURFACE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	---	65	140
13C8-PFOA	---	71	133

Sub-Matrix: WASTEWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	---	65	140
13C8-PFOA	---	71	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	---	65	140
13C8-PFOA	---	71	133

CERTIFICATE OF ANALYSIS

Work Order	: **EM2319355**	Page	: 1 of 9
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
AAAress	: [redacted]	AAAress	: [redacted]
Telej Fone	: [redacted]	Telej Fone	: [redacted]
Pro@ct	: dhCY0889YP5Aw3 MPY43	Date wamj les SeceiveA	: 30C3 ctC4043 11:4_
3 rAer number	: O	Date Analysis CommenceA	: 30C3 ctC4043
C03 CC number	: 9N018	hssue Date	: 04Cp ovC4043 14:98
wamj ler	: [redacted]		
wite	: dhCY0889YP5Aw3 MPY43		
(uote number	: w) xl3Nxl NYLaverton		
po. of samj les receiveA	: 1		
po. of samj les analyseA	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

TFis rej ort suj erseAes any j revious rej ortzs) witF tFis reference. Sesults aj j ly to tFe samj lezs) as submitteA- unless tFe samj ling was conAucteA by ALw. TFis Aocument sFall not be rej roAuceA- excej t in full.

TFis Certificate of Analysis contains tFe following information:

- General Comments
- Analytical Sesults
- wurrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

TFis Aocument Fas been electronically signeA by tFe autForizeA signatories below. Electronic signing is carrieA out in comj liance witF j roceAures sj ecifieA in 41 C5S Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	4hC 3 rganic CFemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2319355-001 due to sample matrix interference.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at ini ial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_OTH019_20231023	----	----	----	----
				Sampling date / time	23-Oct-2023 08:19	---	---	---	---
Compound	CAS Number	LOR	Unit		EM2319355-001	--------	--------	--------	--------
					Result	---	---	---	---
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355 46 4	0.01	µg/L		**0.16**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375 92 8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.06**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_OTH019_20231023	----	----	----	----
				Sampling date / time	23-Oct-2023 08:19	---	---	---	---
Compound	CAS Number	LOR	Unit		EM2319355-001	--------	--------	--------	--------
					Result	---	---	---	---
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**0.22**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.22**	----	----	----	----
Sum of PFAS (WA DER List)	---	0.01	µg/L		**0.22**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**96.1**	----	----	----	----
13C8-PFOA	---	0.02	%		**98.4**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	---	65	140
13C8-PFOA	---	71	133

CERTIFICATE OF ANALYSIS

Work Order	: **EM2319354**	Page	: 1 of 13
Client	: **STANTEC AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ---	Telephone	: [redacted]
Project	: VIC_0445_PFASOMP_23	Date Samples Received	: 30-Oct-2023 11:27
Order number	: -	Date Analysis Commenced	: 30-Oct-2023
C-O-C number	: 59012	Issue Date	: 03-Nov-2023 13:33
Sampler	: [redacted]		
Site	: VIC_0445_PFASOMP_23		
Quote number	: SY/139/19_Laverton		
No. of samples received	: 24		
No. of samples analysed	: 24		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2319355-001 due to sample matrix interference.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at ini ial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW360_20231025	0445_MW361_20231025	0445_MW357_20231024	0445_MW356_20231025	0445_MW313_20231027
				Sampling date / time	25-Oct-2023 07:53	25-Oct-2023 07:46	24-Oct-2023 14:12	25-Oct-2023 07:34	27-Oct-2023 11:53
Compound	CAS Number	LOR	Unit		EM2319354-020	EM2319354-021	EM2319354-022	EM2319354-023	EM2319354-024
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.05**	**0.07**	**0.03**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	**0.10**	**0.02**	<0.01	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.03**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.02**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	0445_MW360_20231025	0445_MW361_20231025	0445_MW357_20231024	0445_MW356_20231025	0445_MW313_20231027
				Sampling date / time	25-Oct-2023 07:53	25-Oct-2023 07:46	24-Oct-2023 14:12	25-Oct-2023 07:34	27-Oct-2023 11:53
Compound	CAS Number	LOR	Unit		EM2319354-020	EM2319354-021	EM2319354-022	EM2319354-023	EM2319354-024
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**0.12**	**0.22**	**0.05**	<0.01	**0.02**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.12**	**0.17**	**0.05**	<0.01	**0.02**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**0.12**	**0.22**	**0.05**	<0.01	**0.02**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**101**	**101**	**96.7**	**98.1**	**98.1**
13C8-PFOA	---	0.02	%		**103**	**103**	**103**	**102**	**103**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW390_20231027	0445_SW393_20231025	0445_SW395_20231027	0445_SW398_20231027	0445_SW403_20231025
				Sampling date / time	27-Oct-2023 11:45	26-Oct-2023 07:43	27-Oct-2023 11:49	27-Oct-2023 11:47	26-Oct-2023 07:34
Compound	CAS Number	LOR	Unit		EM2319354-001	EM2319354-002	EM2319354-003	EM2319354-004	EM2319354-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.12**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.12**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.05**	<0.01	**0.58**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.03**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**0.05**	<0.01	**0.37**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.03**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.14**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.04**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW390_20231027	0445_SW393_20231025	0445_SW395_20231027	0445_SW398_20231027	0445_SW403_20231025
				Sampling date / time	27-Oct-2023 11:45	26-Oct-2023 07:43	27-Oct-2023 11:49	27-Oct-2023 11:47	26-Oct-2023 07:34
Compound	CAS Number	LOR	Unit		EM2319354-001	EM2319354-002	EM2319354-003	EM2319354-004	EM2319354-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		<0.01	<0.01	**0.10**	<0.01	**1.45**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.10**	<0.01	**0.95**
Sum of PFAS (WA DER List)	---	0.01	µg/L		<0.01	<0.01	**0.10**	<0.01	**1.30**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**103**	**117**	**100**	**106**	**108**
13C8-PFOA	---	0.02	%		**101**	**100**	**99.3**	**103**	**103**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW404_20231023	0445_SW405_20231025	0445_SW409_20231023	0445_SW412_20231026	0445_SW416_20231024
				Sampling date / time	23-Oct-2023 08:18	25-Oct-2023 07:33	24-Oct-2023 08:10	26-Oct-2023 14:26	24-Oct-2023 14:11
Compound	CAS Number	LOR	Unit		EM2319354-006	EM2319354-007	EM2319354-008	EM2319354-009	EM2319354-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.07**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.40**	**0.03**	**0.01**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.26**	**0.06**	**0.03**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.09**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.03**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW404_20231023	0445_SW405_20231025	0445_SW409_20231023	0445_SW412_20231026	0445_SW416_20231024
				Sampling date / time	23-Oct-2023 08:18	25-Oct-2023 07:33	24-Oct-2023 08:10	26-Oct-2023 14:26	24-Oct-2023 14:11
Compound	CAS Number	LOR	Unit		EM2319354-006	EM2319354-007	EM2319354-008	EM2319354-009	EM2319354-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		<0.01	0.93	0.09	0.04	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	0.66	0.09	0.04	<0.01
Sum of PFAS (WA DER List)	---	0.01	µg/L		<0.01	0.86	0.09	0.04	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		100	107	110	110	95.1
13C8-PFOA	---	0.02	%		101	98.9	99.8	101	104

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW424_20231023	0445_SW427_20231023	0445_SW430_20231023	0445_SW431_20231023	0445_SW432_20231023
			Sampling date / time	23-Oct-2023 08:17	23-Oct-2023 08:12	23-Oct-2023 08:10	23-Oct-2023 08:11	23-Oct-2023 08:16
Compound	CAS Number	LOR	Unit	EM2319354-011	EM2319354-012	EM2319354-013	EM2319354-014	EM2319354-015
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.04**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.56**	**0.03**	**0.02**	**0.01**	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**1.14**	**0.11**	**0.06**	**0.04**	**0.06**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.04**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.09**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.04**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW424_20231023	0445_SW427_20231023	0445_SW430_20231023	0445_SW431_20231023	0445_SW432_20231023
				Sampling date / time	23-Oct-2023 08:17	23-Oct-2023 08:12	23-Oct-2023 08:10	23-Oct-2023 08:11	23-Oct-2023 08:16
Compound	CAS Number	LOR	Unit		EM2319354-011	EM2319354-012	EM2319354-013	EM2319354-014	EM2319354-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**1.97**	**0.14**	**0.08**	**0.05**	**0.08**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.70**	**0.14**	**0.08**	**0.05**	**0.08**
Sum of PFAS (WA DER List)	---	0.01	µg/L		**1.91**	**0.14**	**0.08**	**0.05**	**0.08**
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**104**	**109**	**109**	**110**	**99.5**
13C8-PFOA	---	0.02	%		**99.0**	**96.5**	**102**	**103**	**101**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	0445_SW434_20231025	0445_SW462_20231024	0445_SW463_20231023	0445_SW470_20231027	----
			Sampling date / time	25-Oct-2023 08:06	24-Oct-2023 14:11	23-Oct-2023 08:16	27-Oct-2023 11:53	----
Compound	CAS Number	LOR	Unit	EM2319354-016	EM2319354-017	EM2319354-018	EM2319354-019	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.05**	**0.02**	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.05**	**0.02**	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	**0.26**	**0.45**	**0.11**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	**0.16**	**0.90**	**0.08**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**0.02**	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.06**	**0.06**	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	**0.02**	**0.03**	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0445_SW434_20231025	0445_SW462_20231024	0445_SW463_20231023	0445_SW470_20231027	----
				Sampling date / time	25-Oct-2023 08:06	24-Oct-2023 14:11	23-Oct-2023 08:16	27-Oct-2023 11:53	----
Compound	CAS Number	LOR	Unit		EM2319354-016	EM2319354-017	EM2319354-018	EM2319354-019	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.60**	**1.50**	**0.19**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.42**	**1.35**	**0.19**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.55**	**1.48**	**0.19**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**113**	**105**	**103**	**95.9**	----
13C8-PFOA	----	0.02	%		**102**	**102**	**99.6**	**92.8**	----

Surrogate Control Limits

Sub-Matrix: GROUNDWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	---	65	140
13C8-PFOA	---	71	133

Sub-Matrix: SURFACE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4 PFOS		65	140
13C8-PFOA	---	71	133

APPENDIX

D

FIELD RECORDS & CALIBRATION CERTIFICATES

Event	Location	Property	Easting	Northing	Monitoring Date	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Hydrasleeve Deployment Depth (mBTOC)[1]	Other Observations on Bore/Site	Temp (C°)	DO (mg/L)	EC (us/Cm)	TDS	pH	Eh (mV)
E5	MW009	East BMA	495603.37	5999848.02	26-10-23	12.48	166.28	6.934	159.346	11.000	Clear, brown sediment present in sleeeve.	15.1	1.24	301.3	195.845	6.02	169.7
E5	MW012	East BMA	495534.14	5999634.04	26-10-23	10.69	167.36	7.724	159.636	7.300	Brown, no odour	17.3	2.74	218.7	142.155	6.35	169.7
E5	MW016	East BMA	495641.49	5999946.12	26-10-23	11.94	166.16	7.072	159.088	9.000	Clear, no odour	16.8	0.71	325	211.25	7.121	130.3
E5	MW018	East BMA	495834.70	5999717.39	26-10-23	10.51	165.43	6.432	158.998	9.400	Clear, no odour	16.4	1.12	631	410.15	6.7	139.4
E5	MW020	East BMA	495826.29	5999801.5	26-10-23	7.06	165.41	7.67	157.740	NA - sampled by bailer	Clear, no odour	15.7	0.73	329.1	213.915	6.56	8.5
E5	MW029	East BMA	495426.45	5999463.69	26-10-23	11.22	168.11	7.696	160.414	9.000	Brown, no odour	16.5	4.39	138.4	89.96	5.93	183.3
E5	MW034	East BMA	495753.66	5999858.29	26-10-23	11.23	166.63	7.67	158.960	9.000	Clear, no odour	17.2	3.14	228.3	148.395	6.43	75
E5	MW035	East BMA	495683.72	5999911.25	26-10-23	11.39	166.22	7.214	159.006	9.000	Clear	15.7	1.03	240	156	6.1	125.3
E5	MW042	East BMA	495677.04	5999879.86	26-10-23	7.5	166.62	7.474	159.146	16.000	Clear	16.3	0.9	234.9	152.685	6.08	133.5
E5	MW043	East BMA	495680.27	5999879.94	26-10-23	13.46	166.55	7.39	159.160	11.300	Clear	15.4	1.14	229.9	149.435	6.11	152.6
E5	MW046_D	East BMA	495752.45	5999855.99	26-10-23	22.34	166.49	8.062	158.428	20.000	Clear	17.7	1.54	244	158.6	6.35	91.8
E5	MW046_I	East BMA	495752.45	5999855.99	26-10-23	14.08	166.48	7.512	158.968	13.000	Clear	17.1	1.77	237.5	154.375	6.37	88.4
E5	MW051	South BMA	492170.69	5999846.02	25-10-23	30	187.95	24.283	163.667	30.040	Clear	18.3	0.69	2782	1808.3	6.11	-46.1
E5	MW051	South BMA	492170.69	5999846.02	28-11-23	30.8	187.95	24.272	163.678	30.040	Clear, sampled afrer bailing	20.9	0.95	2979	1936.35	5.95	29.9
E5	MW052	East BMA	495251.08	5999549.74	25-10-23	9.94	168.49	7.573	160.917	10.00	Clear with black suspended particles	16.8	1.75	117.3	76.245	5.76	82.6
E5	MW052	East BMA	495251.08	5999549.74	28-11-23	9.94	168.49	7.698	160.792	10.00	Sampled before bailing, ants in sleeve, strong sulphur odour	19.2	1.05	112.9	73.385	5.72	4.6
E5	MW052	East BMA	495251.08	5999549.74	29-11-23	9.94	168.49	7.732	160.758	10.00	Sampled after bailing, clear, no odour	18.1	0.75	102.1	66.365	5.5	124.4
E5	MW056	South BMA	492586.60	5999892.65	-	-	-	-	-	-	Not sampled	-	-	-	-	-	-
E5	MW304	South BMA	491289.32	6000521.98	26-10-23	22.23	176.131	15.757	160.374	20.00	Clear cloudy	18	0.63	12233	7951.45	6.46	11.1
E5	MW307	South BMA	491307.09	6000261.17	26-10-23	27.85	181.086	19.705	161.381	26.30	Brown clear	17.6	3.93	4147	2695.55	6.96	74.7
E5	MW311	South BMA	491514.62	6000214.45	27-10-23	23.27	182.452	20.451	162.001	21.900	Cloudy	19.9	3.54	10117	6576.05	6.32	99.6
E5	MW312	South BMA	491682.00	6000520	26-10-23	18.97	175.841	11.175	164.666	16.60	Clear	20.4	3.23	4251	2763.15	7.3	62.8
E5	MW313	South BMA	491109.26	5999857.37	27-10-23	NM	193.128	Data Lost	-	33.000	Clear	18.6	2.12	693	450.45	6.84	136.8
E5	MW315	South BMA	491244.00	5999661	-	NM	204.875	Dry	-	-	Dry	-	-	-	-	-	-
E5	MW317	South BMA	491231.00	5999650	-	NM	204.364	Dry	-	-	Dry	-	-	-	-	-	-
E5	MW318	South BMA	491261.00	5999655	-	NM	205.965	Dry	-	-	Dry	-	-	-	-	-	-
E5	MW319	South BMA	491998.00	5999572	25-10-23	30+	199.524	35.12	164.404	41.000	Clear	17.7	1.28	762	495.3	6.44	61.5
E5	MW321	South BMA	492074.00	5999548	25-10-23	40.03	200.815	36.401	164.414	38.000	Clear	18.4	1.59	1074	698.1	Lost	28.3
E5	MW321	South BMA	492074.00	5999548	28-11-23	40.03	200.815	36.226	164.589	38.000	Sampled before bailing, slight sulphur odour	20.6	0.59	1172	761.8	6.27	67.3
E5	MW321	South BMA	492074.00	5999548	29-11-23	40.03	200.815	36.398	164.417	38.000	Sampled after bailing, clear, no odour	20.5	1.03	1108	720.2	6.24	128.3
E5	MW323	South BMA	492076.00	6000078	25-10-23	23.11	184.472	19.396	165.076	21.840	Clear	18.5	1.36	4841	3146.65	5.61	115

Event	Location	Property	Easting	Northing	Monitoring Date	Bore Depth (m bTOC)	Top of casing (mAHD)	SWL (bTOC)	SWL (mAHD)	Hydrasleeve Deployment Depth (mBTOC)[1]	Other Observations on Bore/Site	Temp (C°)	DO (mg/L)	EC (us/Cm)	TDS	pH	Eh (mV)
E5	MW329	South BMA	492199.00	6000242	25-10-23	19.99	181.435	14.75	166.685	18.600	Clear	17.3	4.63	1677	1090.05	7.27	98.9
E5	MW342	North BMA	493664.00	6000189	26-10-23	17.65	180.605	13.144	167.461	16.51	Brown	18.4	3.68	762	495.3	10.17	39.3
E5	MW345	North BMA	494560.00	5999979	26-10-23	5.53	168.316	3.884	164.432	5.35	Clear	16	2.82	6714	4364.1	6.99	-36
E5	MW346	North BMA	494621.00	6000250	26-10-23	8.84	166.944	1.916	165.028	8.80	Clear	16.5	1.41	1581	1027.65	6.77	53.2
E5	MW350_D	East BMA	495299.30	5999571.3	25-10-23	20.64	168.229	7.695	160.534	19.000	Clear	18.5	1.94	212.4	138.06	6.49	179.2
E5	MW350_S	East BMA	495299.30	5999571.3	25-10-23	10.19	168.233	7.735	160.498	9.03	Cloudy	18.6	4.3	266.1	172.965	6.27	170
E5	MW351	East BMA	495382.00	6000184	25-10-23	8.82	164.79	5.401	159.389	7.80	Clear	15.7	2	120.3	78.195	6.04	138.2
E5	MW352	Offsite	495498.59	6000070.77	25-10-23	9.9	164.493	5.283	159.210	8.83	Clear	15.7	1.58	129.5	84.175	6.41	137.3
E5	MW353	East BMA	495479.00	5999808	25-10-23	7.97	166.625	7.101	159.524	7.700	Brown	17.8	1.15	689	447.85	6.33	133.9
E5	MW354	East BMA	495767.20	5999625.8	26-10-23	11.05	166.625	6.886	159.739	9.000	Brown	16.6	1.34	189.8	123.37	6.4	131.7
E5	MW356	Offsite	496059.80	6000518.4	25-10-23	2.01	156.882	1.313	155.569	9.200	Orange brown	13.4	1.69	55.2	35.88	6.61	-9.1
E5	MW357	Offsite	495793.41	6001682.22	24-10-23	6.38	156.243	2.174	154.069	5.00	Grey	16.7	1.01	202.7	131.755	5.86	-61.7
E5	MW359	Onsite	492119.02	5999519.652	28-11-23	40.05	-	36.015	-	37.50	Clear, no odour	20.6	2.07	899	584.35	6.16	111.1
E5	MW360	Offsite	490936.64	6001498.75	25-10-23	13.15	164.89	7.509	157.381	11.00	Clear	17.2	1.91	640	416	7.38	25.4
E5	MW361	Offsite	490943.84	6003056.8	25-10-23	6.37	153.716	1.772	151.944	4.00	Clear	14.2	1.09	329.1	213.915	6.3	43.3
E5	MW403	Offsite	495312.20	5999591.49	26-10-23	10.04	166.926	6.515	160.411	9.00	Clear	17.7	3.23	136.9	88.985	6.14	173
E5	MW404	Offsite	495269.66	5999632.7	26-10-23	10.15	166.617	6.382	160.235	9.00	Clear	-	-	-	-	-	-
E5	MW416	Onsite	492206.45	5999857.15	25-10-23	29.47	187.72	23.497	164.223	28.95	Clear slight cloudy	16.3	1.21	1923	1249.95	6.35	-21.4
E5	OTH019	Offsite	-	-	23-10-23	-	-	-	-	NA - sampled by tap	Clear	17.2	2.03	332.5	216.125	6.09	120.5

1. As measured from the top of the Hydrasleeve

Surface Water Field Data Records

Event	Location ID	Property	Easting	Northing	Monitoring Date	Water body depth (m)	Sample Depth (m)	Flow Rate	Flow Rate (m/s)	Water Colour	Turbidity	Channel Width (m)	Water Body Condition	Other Observations	Temp (Co)	DO (mg/L)	EC (us/Cm)	TDS (mg/L)	pH	Eh (mV)
E5	SW302	On-base	491217.00	5999668.00	23/10/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
E5	SW307	On-base	491296.00	5999663.00	23/10/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
E5	SW310	On-base	491245.00	6000071.00	23/10/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
E5	SW311	On-base	491280.00	6000430.00	23/10/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
E5	SW313	On-base	491321.00	6000251.00	23/10/2023	0.1	0.05	No	0	Clear	No			No foaming, no microorganisms, no algae, no sheen, no odour	25.5	6.1	94.4	61.36	7.04	188.6
E5	SW316	On-base	491421.00	6000456.00	23/10/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
E5	SW321	On-base	491612.00	6000381.00	23/10/2023	0.1	0.05	No	0	Clear	No			No foaming, no microorganisms, no algae, visible sheen, no odour	20.2	6.11	132.2	85.93	7.24	129.4
E5	SW322	On-base	491706.00	6000527.00	23/10/2023	0.1	0.05	No	0	Clear	No			No foaming, no microorganisms, no algae, no sheen, no odour	18.4	6.16	123.1	80.015	7.2	123.5
E5	SW323	On-base	491860.00	6000478.00	23/10/2023	0.5	0.2	No	0	Brown	No			No foaming, no microorganisms, no algae, no sheen, no odour	22.7	4.73	94.8	61.62	7.04	129.4
E5	SW324	On-base	491976.00	6000279.00	26/10/2023	0.1	0.05	No	0	Brown	Low			No foaming, no microorganisms, no algae, no sheen, no odour	16.5	4.33	180.9	117.585	7.76	72.8
E5	SW326	On-base	491968.00	5999998.00	23/10/2023	0.2	0.1	No	0	Clear sight brown	No			No foaming, no microorganisms, no algae, no sheen, no odour	18.8	8.76	246.7	160.355	6.75	182.8
E5	SW332	On-base	492126.00	6000156.00	28/11/2023	0.2	0.1	No	0	Cloudy grey	Medium	-	-	No foaming, no microorganisms, no algae, no sheen, no odour	22.8	2.55	132.5	86.125	6.27	161.5
E5	SW333	On-base	492177.00	6000246.00	28/11/2023	0.2	0.1	No	0	Black	High	-	-	No foaming, no microorganisms, no algae, no sheen, no odour	-	4.39	59.3	38.545	6.43	147.9
E5	SW336	On-base	492186.00	5999832.00	27/10/2023	0.2	0.1	No	0	Green	High			Lots of algae present in water	18.1	9.74	47.2	30.68	8.51	75.2
E5	SW338	On-base	492273.00	6000114.00	25/10/2023	1	0.1	No	0	Clear	No			Algae on rocks beneath water	20.7	6.3	210.9	137.085	7.8	42.1
E5	SW340	On-base	492352.00	6000181.00	25/10/2023	0.3	0.2	No	0	Clear slight brown	No			Drain next to the original sampling point	14.6	9.55	290.6	188.89	7.87	70.6
E5	SW346	On-base	492606.00	6000048.00	25/10/2023	0.2	0.1	No	0	Brown cloudy	No			Tadpoles and slight sheen	16.8	6.21	193.5	125.775	6.79	107.9
E5	SW349	On-base	492827.00	5999999.00	23/10/2023	0.5	0.1	Low	0.05	Cloudy	Low			No foaming, no microorganisms, no algae, no sheen, no odour	17.2	3.54	73.3	47.645	6.62	119
E5	SW355	On-base	492997.00	5999947.00	23/10/2023	0.6	0.1	Low	0.05	Cloudy	Low			No foaming, no microorganisms, no algae, no sheen, no odour	18.7	4.64	54.5	35.425	6.64	126.2
E5	SW370	On-base	494029.00	5999774.00	26/10/2023	0.1	0.1	No	0	Orange brown	High			Sheen on surface of water, significant organic matter/organge algae in water	-	-	-	-	-	-
E5	SW374	On-base	494552.00	6000001.00	26/10/2023	0.2	0.1	No	0	Cloudy brown	Medium			No foaming, no microorganisms, no algae, no sheen, no odour	17.6	6.74	123.8	80.47	7.14	68.8
E5	SW375	On-base	494650.00	6000239.00	26/10/2023	0.4	0.1	No	0	Cloudy	Low			Algae on plants and drum in water	19.3	4.3	99.9	64.935	7.39	56.3
E5	SW379	On-base	495222.00	5999565.00	24/10/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
E5	SW380	On-base	495340.00	5999652.00	25/10/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
E5	SW382	On-base	495424.00	6000092.00	25/10/2023	0.4	0.1	No	0	Cloudy	Low			No foaming, no microorganisms, no algae, no sheen, no odour	16.9	5.64	22.6	14.69	6.84	110.4
E5	SW387	On-base	496084.00	5999677.00	27/10/2023	0.1	0.1	Low	0.05	Clear	No			Lots of algae on surface	13.1	8.13	273.9	178.035	7.18	135.5
E5	SW388	On-base	496272.00	5999749.00	27/10/2023	-	-	-	-	-	-	-	-	Dry	-	-	-	-	-	-
E5	SW390	Off-base	497942.00	5998177.00	27/10/2023	1	0.1	High	1	Clear	No			No foaming, no microorganisms, no algae, no sheen, no odour	15.3	6.88	42.4	27.56	7.35	74.3
E5	SW393	Off-base	496236.00	5999368.00	25/10/2023	0.3	0.1	High	1	Cloudy	Low			Foaming over rapids	18.5	8.27	183.3	119.145	7.93	180.3
E5	SW395	Off-base	496191.00	5999895.00	27/10/2023	0.6	0.1	No	0	Cloud brown	Medium			No foaming, no microorganisms, no algae, no sheen, no odour	13.9	2.98	153.1	99.515	7.32	128.4
E5	SW396		-	-	27/10/2023	0.1	0.05	No	0	Brown cloudy	Low			Organic sheen	16.3	3.7	588	382.2	6.93	116.6

E5	SW397				25/10/2023	0.9		0.1	No		0	Cloudy brown	Low			Slight oily sheen around edge of water body	14.3	3.89	310.9	202.085	7.47	153.5
E5	SW398	Off-base	496369.00	6000178.00	27/10/2023	1		0.1	High		0.9	Clear	No			No foaming, no microorganisms, no algae, no sheen, no odour	12.3	7.77	32.7	21.255	8.17	116.1
E5	SW400		-	-	25/10/2023	0.5		0.1	No		0	Cloudy	Low			No foaming, no microorganisms, no algae, no sheen, no odour	15	4.23	213.7	138.905	7.05	152.7
E5	SW401	Off-base	-	-	25/10/2023	0.1		0.01	No		0	Cloudy	No			Small foam lines present	13.8	4.55	214.1	139.165	6.89	67.6
E5	SW403	Off-base	495794.00	6000721.00	25/10/2023	0.5		0.1	No		0	Brown	Low			No foaming, no microorganisms, no algae, no sheen, no odour	17.8	3.81	213.1	138.515	7.08	8.9
E5	SW404	Off-base	495932.00	6000777.00	23/10/2023	1.5		0.1	High		1	Clear	No			No foaming, no microorganisms, no algae, no sheen, no odour	15.8	6.55	39.4	25.61	7.05	49.1
E5	SW405	Off-base	495713.70	6000917.23	25/10/2023	0.2		0.1	Low		0.05	Cloudy	Low			Algae on plants in water	22.4	8.95	348.5	226.525	7.8	10.5
E5	SW409	Off-base	495342.00	6000744.00	23/10/2023	0.6		0.1	No		0	Clear	No			No foaming, no microorganisms, no algae, no sheen, no odour	-	-	-	-	-	-
E5	SW412	Off-base	495462.23	6001117.47	26/10/2023	0.2		0.1	No		0	Clear	No			Small sheen patches, appears natural	14.7	4.24	682	443.3	6.88	23.7
E5	SW416	Off-base	495852.00	6001776.00	24/10/2023	0.8		0.2	High		1	Cloudy	Low			No foaming, no microorganisms, no algae, no sheen, no odour	15.4	7.01	41.7	27.105	7.16	-11.5
E5	SW424	Off-base	491511.00	6000639.00	23/10/2023	0.15		0.1	No		0	Cloudy brown	Medium			Mosquito larvae and oily sheen on surface	17.7	3	28.6	18.59	6.4	50.9
E5	SW427	Off-base	490948.72	6001301.83	23/10/2023	0.4		0.1	Low		0.05	Clear with particles of c	Low			Organic matter on surface of water body	14.7	1.89	113.8	73.97	6.63	81
E5	SW430	Off-base	490913.00	6002786.00	23/10/2023	0.2		0.1	Medium		0.1	Clear	No			Slight sulphur odour	18.9	3.93	153.5	99.775	7.03	-60.5
E5	SW431	Off-base	490883.28	6003648.07	23/10/2023	0.1		0.1	Low		0.05	Clear	No			Bugs in water, algae on sediment, slight thick surface sheen	16.8	2.94	155.6	101.14	6.62	1.7
E5	SW432	Off-base	490789.00	6003749.00	23/10/2023	0.15		0.1	Medium		0.2	Clear	No			Algae on rocks in water	16	6.16	157.9	102.635	6.96	50.1
E5	SW434	Off-base	490476.00	6003891.00	25/10/2023	1		0.1	No		0	Clear	No			No foaming, no microorganisms, no algae, no sheen, no odour		6.48	57.6	37.44	7.11	119.4
E5	SW448	On-base	491960.62	5999684.39	23/10/2023	-		-	-		-	-	-			Dry	-	-	-	-	-	-
E5	SW462	Off-base	495777.32	6001658.16	24/10/2023	0.15		0.1	Low		0.05	Cloudy	Low			Algae on rocks	17	2.49	319.1	207.415	6.69	-36.2
E5	SW463	Off-base	491216.27	6000546.54	23/10/2023	0.3		0.15	No		0	Brown	High			White sheen on surface, lots of twigs and organic matter on surface	14.3	3.83	61	39.65	6.37	149.1
E5	SW470	Off-base	496154.23	6000093.25	27/10/2023	1		0.1	Low		0.05	Brown	Medium			No foaming, no microorganisms, no algae, no sheen, no odour	13.1	3.03	76	49.4	7.2	124.7
E5	SW471	Off-base	495945.94	6000282.56	25/10/2023	0.5		0.1	No		0	Cloudy brown	No			No foaming, no microorganisms, algae visible, no sheen, no odour	13.3	2.41	246.1	159.965	6.81	152.6
E5	SW487	Off-base	495826.91	6000046.42	25/10/2023	0.9		0.1	No		0	Cloudy brown	Medium			No foaming, no microorganisms, no algae, no sheen, no odour	15.8	3.55	343.9	223.535	7.38	161.9

F3.04 – Groundwater Monitoring Bore Development Record

Project Details	
Project Name: Bandiana	Job Number: DEF19008
Site Address: BMA	PP/PM: BW/MB
Client Company/Contact: Defence	Date:
Persons Present: MB	Notes By: MB

Field Data

Bore Information (attach bore log)

Bore Number:	Drilled Depth (m BGL):
Screen Interval (m BGL):	Stick-up (m):
Other Observations:	

Pre Purge Information

PSH Top (m TOC): -	PSH Bottom (m TOC): -
Standing Water Level (m TOC): 7.698	Well Depth (measured) (m TOC): 9.74
Water column (m):	

Well Volume Estimation (see WI3.04 'Field Calculation of GW Bore Volumes' for accurate calcs)

Drilled/ Casing Diameter	100/25 (mm)	125/50 (mm)	150/50 (mm)	250/100 (mm)
Conversion Factor	2.7	5.1	6.7	20

Well Volume (L) = water column x conversion factor 2.042 × 5.1 = 10.2L

Development Record

3 Bore Volumes Removed: Yes/No: Purged Water Clear: Yes/No

Development Method (Disposable Bailer; S/Steel Bailer; Submersible Pump; Waterra; Waterra with Surge Block; Air; Other – Specify):

Volume Removed (L)	*SWL (mTOC)*	*Time*	*Comments (e.g. colour, turbidity, odour, water quality parameters)*
0 L			Clear
10 L			Cloudy,
20 L			Cloudy
30 L			Clear

30L = **Total Volume Removed**

F3.04 – Groundwater Monitoring Bore Development Record

Project Details

Project Name: Bandiana	Job Number: DEF19008
Site Address: BMA	PP/PM: BW/MB
Client Company/Contact: Defence	Date:
Persons Present: MB	Notes By: MB

Field Data

Bore Information (attach bore log)

Bore Number: MW321	Drilled Depth (m BGL):
Screen Interval (m BGL):	Stick-up (m):
Other Observations:	

Pre Purge Information

PSH Top (m TOC): -	PSH Bottom (m TOC): -
Standing Water Level (m TOC): 36.226	Well Depth (measured) (m TOC): 40.03
Water column (m): 3.804	

Well Volume Estimation (see WI3.04 'Field Calculation of GW Bore Volumes' for accurate calcs)

Drilled/ Casing Diameter	100/25 (mm)	125/50 (mm)	150/50 (mm)	250/100 (mm)
Conversion Factor	2.7	5.1	6.7	20

Well Volume (L) = water column x conversion factor 3.804 x 5.1 = 19.4 L

Development Record

3 Bore Volumes Removed: Yes/No: Purged Water Clear: Yes/No

Development Method (Disposable Bailer; S/Steel Bailer; Submersible Pump; Waterra; Waterra with Surge Block; Air; Other – Specify):

Volume Removed (L)	*SWL (mTOC)*	*Time*	*Comments (e.g. colour, turbidity, odour, water quality parameters)*
10L			Brown
20L			"
25L			"
30L			"
Bailed dry			

= Total Volume Removed

~~Sapphire Ants~~ MW052 bailing parameters

	Temp	DO	EC	pH	ORP	Comment
10 L	18.6	0.85	100.2	5.39	18.3	Cloudy, ants
20 L	18.6	1.19	105 5	5.39	23.0	Cloudy
30 L	18.9	1.53	102.4	5.39	30 0	Clear

MW321

5 L	20.8	0.52	1163	6.32	74.8	Brown
10 L	20.6	0 61	1166	6.30	- 7.0	Brown
20 L	20.9	0.64	1172	6.28	- 17.4	Brown
30 L	20.5	1.04	1148	6.26	- 17.5	Brown

- Bailed dry

Instrument Quality Report
Interface Meter

Enqip #: 21099
Company: Stantec Australia Pty Ltd
Consultant: [redacted]
PO #: Defence OMP
Certificate #: 31034

INSTRUMENT IDENTIFICATION

Instrument Type: Solinst Interface Meter
Model Number: 122
Serial Number: 313050

INSPECTION RECORD

Battery:	PASS	**Water Tone:**	PASS
Tape Condition:	PASS	**Hydrocarbon Tone:**	PASS

Tested By: Richard Nguyen **Test Date:** 24/11/2023

Date of Bump Test	Ambient Air Oxygen Calibration	Zero % Oxygen Solution Calibration	Standard Concentrations	Bump Test Reading	Bump Test Readings Accepted?	Test by (Name)	(Signature)
28/11	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y)/N pH 7.00 (Y)/N pH 10.00 (Y)/N EC: __µS/cm @ 13°C (Y)/N Redox: __ mV @ (Y)/N	pH 4.00: 4.01 pH 7.00: 7.02 pH 10.00: 10.10 EC: ~~1280~~ 2776 Redox: 247 @ 13	(Y)/N (Y)/N (Y)/N (Y)/N (Y)/N	MB	[redacted]
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y/N pH 7.00 Y/N pH 10.00 Y/N EC: __µS/cm @ __°C Y/N Redox: __ mV @ Y/N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y/N Y/N Y/N Y/N Y/N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y/N pH 7.00 Y/N pH 10.00 Y/N EC: __µS/cm @ __°C Y/N Redox: __ mV @ Y/N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y/N Y/N Y/N Y/N Y/N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y/N pH 7.00 Y/N pH 10.00 Y/N EC: __µS/cm @ __°C Y/N Redox: __ mV @ Y/N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y/N Y/N Y/N Y/N Y/N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y/N pH 7.00 Y/N pH 10.00 Y/N EC: __µS/cm @ __°C Y/N Redox: __ mV @ Y/N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y/N Y/N Y/N Y/N Y/N		

Equipment Calibration Report

YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus / YSI ProPlus Quattro

Serial Number: _____

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent
Carry case	☑	☐
Attached sensors (x4)	☑	☐
Spare Batteries	☑	☐
Connector Cable	☑	☐
Instruction Manual	☑	☐

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	☑	☑
Operations check (screen functions)	☑	☑
Temperature check	☑	☑

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	4.06
pH	pH: Buffer Solution 7.00	7.00	7.06
pH	pH: Buffer Solution 10.00	10.00	10.01
Redox	Standard ORP solution	241 mV @ 12 °c	242 mV @ 12 °c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	100 %
O_2	Sodium Sulphate for 0% Dissolved Oxygen	0%	0 %
Conductivity	Standard Conductivity Solution	1880 µS/cm @ 25 °c	1880 µS/cm @ 25 °c

Calibrated by: MB

Signed: [redacted]

Date: 27/11/2023

[1] YSI Professional Plus – Calibration Tips: Rev A, December 2010.

F3.01 Equipment Calibration Report
YSI ProPlus Water Quality Meter

This YSI ProPlus Water Quality Meter has been performance checked as per the manufacturer's guidelines[1].

Unit Type: YSI ProPlus
Serial Number: 19H102165

The unit has been checked for and comprises of the following items:

Item	Present	Damaged or Absent?
Carry case	☑	☐
Attached sensors (x4)	☑	☐
Spare Batteries	☑	☐
Connector Cable	☑	☐
Instruction Manual	☑	☐

The following tests and operational checks have been conducted on the unit:

Item	Test Completed	Test Passed
WQM unit electrodes cleaned and checked	☑	☐
Operations check (screen functions)	☑	☐
Temperature check	☑	☐

Calibration:

Sensor	Cal. Solution	Value	Reading
pH	pH: Buffer Solution 4.00	4.00	4.00
pH	pH: Buffer Solution 7.00	7.00	7.05
pH	pH: Buffer Solution 10.00	10.00	
Redox	Standard ORP solution	241 mV @ 12 °c	249.2 mV @ 12 °c
O_2	Ambient Air for 100% Dissolved Oxygen	100%	✓
O_2	Sodium Sulphite for 0% Dissolved Oxygen	0%	
Conductivity	Standard Conductivity Solution	2761 µS/cm @ 12 °c	3760 mV @ 25 °c

Checked/ Calibrated by: MA

Signed: [redacted]

Date: 23/10/23

[1] YSI Professional Plus – Calibration Tips; Rev A, December 2010.

[redacted]

Date of Bump Test	Ambient Air Oxygen Calibration	Zero % Oxygen Solution Calibration	Standard Concentrations	Bump Test Reading	Bump Test Readings Accepted?	Test by (Name)	(Signature)
25/10/23	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 (Y) / N pH 10.00 Y / (N) EC: 1.413 µS/cm @ 25 °C (Y) / N Redox: ___ mV @ ___ (Y) / N	pH 4.00: 4.07 pH 7.00: 7.12 pH 10.00: N/A EC: 2.52 Redox: 252.3	(Y) / N (Y) / N Y / (N) (Y) / N (Y) / N	MA	[redacted]
26/10/23	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) N pH 7.00 (Y) / N pH 10.00 Y / (N) EC: 1.413 µS/cm @ 25 °C (Y) / N Redox: 254 mV @ 25 (Y) / N	pH 4.00: 3.98 pH 7.00: 7.08 pH 10.00: N/A EC: 2.776 Redox: 253 @ 5°	(Y) / N (Y) / N Y / (N) (Y) / N (Y) / N	MA	[redacted]
27/10/23	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 (Y) / N pH 10.00 Y / (N) EC: 1.413 µS/cm @ 25 °C (Y) / N Redox: ___ mV @ ___ (Y) / N	pH 4.00: 4.20 pH 7.00: 7.12 pH 10.00: EC: 2.751 Redox: 248.7	(Y) / N (Y) / N Y / (N) (Y) / N (Y) / N	MA	[redacted]
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: ___ µS/cm @ ___ °C Y / N Redox: ___ mV @ ___ Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC: ___ µS/cm @ ___ °C Y / N Redox: ___ mV @ ___ Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		

Equipment Calibration Form
YSI ProPlus

Enqip #: 20766
Company: Stantec Australia Pty Ltd
Consultant: [redacted]
PO #: DEF19008
Certificate #: 30580

INSTRUMENT IDENTIFICATION

Model Number: 6050000
Serial Number: 19K102539
Instrument Type: YSI ProPlus

INSPECTION RECORD

Batteries Checked:	PASS	**Date & Time:**	PASS
Electrodes Cleaned/Checked:	PASS	**Temperature:**	PASS

CALIBRATION DETAILS

Sensor	Cal Solution	Value	Reading
pH	Buffer 4.00	4.00 pH	4.00 pH
	Buffer 7.00	7.00 pH	7.00 pH
Redox	Standard ORP	234.5 mV @ 20.0 °C	234.5 mV
O_2	Zero Dissolved Oxygen	0.0 %	0.0 %
	Air	100.0 %	100.0 %
Conductivity	Standard Conductivity	2.76 mS/cm	2.76 mS/cm

Calibration Successful: YES

Calibrated By: [redacted]

Test Date: 20/10/2023

enqip
116 Thistlethwaite St, South Melbourne 3205
P 1300 218 987
E info@enqip.com.au | **W** www.enqip.com.au

Date of Bump Test	Ambient Air Oxygen Calibration	Zero % Oxygen Solution Calibration	Standard Concentrations	Bump Test Reading	Bump Test Readings Accepted?	Test by (Name)	(Signature)
24/10	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 (Y) / N pH 10.00 (Y) / N EC: 12.88 µS/cm @ 25°C (Y) / N __°C (Y) / N Redox: 240 mV @ 30 (Y) / N	pH 4.00: 3.91 pH 7.00: 6.96 pH 10.00: 10.01 EC: Redox: 239.1	(Y) / N (Y) / N (Y) / N (Y) / N (Y) / N	MB	[redacted]
25/10	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 // (Y) / N pH 10.00 (Y) / N EC:__µS/cm @ (Y) / N __°C (Y) / N Redox:___mV @ (Y) / N	pH 4.00: 3.82 pH 7.00: 6.81 pH 10.00: 10.20 EC: 7499 @ 11.8 Redox: 245.5 @ 12.8	(Y) / N (Y) / N (Y) / N (Y) / N (Y) / N	MB	[redacted]
26/10	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 // (Y) / N pH 10.00 (Y) / N EC:__µS/cm @ (Y) / N __°C (Y) / N Redox:___mV @ (Y) / N	pH 4.00: 3.90 pH 7.00: 6.89 pH 10.00: ~~10.09~~ 9.89 EC: 10401 Redox: 249.8 @ 15.1c	(Y) / N (Y) / N (Y) / N (Y) / N (Y) / N	MB	[redacted]
27/10	100% Saturation? (Y) N	0% Calibration? (Y) N	pH 4.00 (Y) / N pH 7.00 // (Y) / N pH 10.00 (Y) / N EC:__µS/cm @ (Y) / N __°C (Y) / N Redox:___mV @ (Y) / N	pH 4.00: 3.91 pH 7.00: 6.91 pH 10.00: 10.00 EC: 11605 Redox: 240 @ 20c	(Y) / N (Y) / N (Y) / N (Y) / N (Y) / N	MB	[redacted]
	100% Saturation? Y N	0% Calibration? Y N	pH 4.00 Y / N pH 7.00 Y / N pH 10.00 Y / N EC:__µS/cm @ Y / N __°C Y / N Redox:___mV @ Y / N	pH 4.00: pH 7.00: pH 10.00: EC: Redox:	Y / N Y / N Y / N Y / N Y / N		

APPENDIX

E

DATA QUALITY REVIEW

Data Quality Review
Bandiana Military Area

This Appendix reviews the Quality Assurance (QA) and Quality Control (QC) documentation. Quality assurance encompasses the actions, procedures, checks and decisions undertaken to ensure sample integrity and representativeness, and the reliability and accuracy of analysis results. The QA documentation should also include an indication of the Data Quality Objectives sought in relation to each significant action, test or process involved in the Assessment.

QC activities measure the effectiveness of the QA procedures by undertaking testing, and then comparing results to previously established objectives. QC work will include the internal laboratory testing as well as results of QC samples submitted such as trip blanks and duplicates. The quality of the information and/or data is deemed satisfactory when the QC results demonstrate that agreed objectives have been met.

Cardno undertook a review of its QA/QC as part of the data validation exercise. The findings are summarised below.

QA/QC Aspects	Evidence and Evaluation
	QA Documentation
Sampling and Analysis Quality Plan and Data Quality Objectives	Cardno was engaged by Department of Defence (the client) to carry out the PFAS Ongoing Monitoring Plan (OMP) at Bandiana Military Area, VIC (the Site). The monitoring event was completed in October and November 2023. The monitoring event was completed in general accordance with the scope and limitations presented in Cardno's Sampling and Analysis Quality Plan (SAQP) of 13 October 2023 (Our Ref: OMP002_Bandiana_ SAQP_Rev5). The assessment was carried out in general compliance with the following: ▪ Australian Standard AS 4482-2005 (2005) Guide to the investigation and sampling of sites with potentially contaminated soils, Part 1 - Non-volatile and semi-volatile compounds (withdrawn, but referred to for state of knowledge). ▪ Department of Defence (2021), Contamination Management Manual (DCMM), Annex L – Data Management, August 2019, Amended June 2021. ▪ Department of Defence (2019), Pollution Prevention Guideline - Routine Water Quality Monitoring, Department of Defence, Department of Energy, 2018, Quality System Manual Schedule B15. ▪ EPA Victoria (2009), Industrial Waste Resources Guidelines, Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, Publication 701. ▪ Heads of Environmental Protection Authority's Australia and New Zealand (HEPA) (2020), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020. ▪ National Environment Protection Council (NEPC), 1999, National Environmental Protection (Assessment of Site Contamination) Measure (as amended 2013) (ASC NEPM). ▪ National Health and Medical Research Council (NHMRC) (2019), Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water, August 2019. ▪ USEPA (2006), Guidance for the Data Quality Objectives Process (EPA QA/G-4). A quality control program was implemented during the investigation and the quality assurance procedures used have been reiterated in the report.

QA/QC Aspects	Evidence and Evaluation
	The investigation was carried out in accordance with the Safe Work method Statements (SWMS) and Health, Safety and Environment Plan (HSEP) for the Site. Detailed work plans were also provided and are outlined in the SAQP. The Data Quality Objectives were expressed in terms of the purpose of the assessment and the relevant assessment criteria
Data Validation Report	This review constitutes a data validation review. This was supported by an Esdat generated "QAQC Checker" excel report, summarised in Tables B3 and B4, Appendix B.
Data Representativeness	
Holding Times	Groundwater and surface water analysis holding times were in conformance with EPA Publication IWRG701 2009 *'Sampling and Analysis of Waters, Wastewaters, Soils and Wastes*.
Background Samples	No background samples were collected as part of this assessment.
Equipment Decontamination	The decontamination methodology conducted during this investigation is documented in the body of the report, and was in general conformance with the SAQP. All re-usable sampling equipment was thoroughly washed using PFAS & phosphate-free detergent (Liquinox), then double rinsed with clean water before the sample collection.
Data Precision and Accuracy	
QC Testing – Blind Replicates (Primary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 40 ▪ Blind Replicate Samples Analysed: 5 ▪ Blind Replicate Analyte Pairs: 155 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 1 ▪ Percentage of Analyte Pairs Exceeding Criteria: 0.64% The RPD exceedances associated with PFAS compounds are considered to be minor and likely attributed to low concentrations of analyte pairs. RPD results are presented in Table B3, Appendix B. ***Surface water*** Acceptance Criteria: RPD < 30 % ▪ Surface water Samples Analysed: 42 ▪ Blind Replicate Samples Analysed: 5 ▪ Blind Replicate Analyte Pairs: 160 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 1 ▪ Percentage of Analyte Pairs Exceeding Criteria: 0.63% The RPD exceedances associated with PFAS compounds are considered to be minor and likely attributed to low concentrations of analyte pairs. RPD results are presented in Table B3, Appendix B.
QC Testing – Field Splits (Secondary Lab)	***Groundwater*** ▪ Acceptance Criteria: RPD < 30% ▪ Groundwater Samples Analysed: 40 ▪ Field Split Samples Analysed: 5 ▪ Field Split Analyte Pairs: 165 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 4

QA/QC Aspects	Evidence and Evaluation
	▪ Percentage of Analyte Pairs Exceeding Criteria: 2.42% The RPD exceedances associated with PFAS compounds are considered to be minor and likely attributed to low concentrations of analyte pairs. RPD results are presented in Table B3, Appendix B ***Surface water*** ▪ Acceptance Criteria: RPD < 30 % ▪ Surface water Samples Analysed: 42 ▪ Field Split Samples Analysed: 5 ▪ Field Split Analyte Pairs: 175 (excludes 'analytes' that are a summation of other analytes) ▪ Number of Analyte Pairs Exceeding Criteria: 2 ▪ Percentage of Analyte Pairs Exceeding Criteria: 0.11% The RPD exceedances associated with PFAS compounds are considered to be minor and likely attributed to low concentrations of analyte pairs. RPD results are presented in Table B3, Appendix B
Trip Blanks	Five (5) trip blanks were collected and laboratory tested for PFAS. All analytes were reported below the limit of reporting (LOR). Trip blank results are presented in Table B4, Appendix B.
Laboratory Internal QC	Evidence of the laboratories internal QC testing is present and complete. Both ALS (the primary laboratory) and Eurofins-mgt (the secondary laboratory) performed internal QC with adequate testing and mostly satisfactory results for matrix spikes, method blanks and laboratory duplicates.
Laboratory Method Detection Limit	Laboratory reports indicate the method detection limits were lower than the respective assessment criteria.
NATA endorsement of laboratory reports	Laboratory reports were stamped with the NATA endorsement stamp and signature. Laboratory reports are included in Appendix C of this report.
Calibration of Field Equipment	All field equipment used was calibrated by the equipment supplier. Additionally, daily bump tests were performed of the water quality meter throughout the monitoring event. Certificates are included in Appendix D of this report.
Decontamination and Equipment Blanks	All re-usable sampling equipment was thoroughly washed using PFAS & phosphate-free detergent, then double rinsed with clean water before the sample collection. Seven (7) rinsate blank samples were tested for PFAS, of which all reported PFAS concentrations below the laboratory LOR. Results are shown in Table B4, Appendix B.
Data Comparability	
Full Review of Data	Once all results have been received, Cardno undertook a full review of the data for any anomalies in consideration of historical data at each location (where available), such as first-time detections or new exceedances of adopted criteria being reported at locations which have not had detections or exceedances previously. Where potentially anomalous data is identified or suspected, further confirmatory measures were undertaken such as re-extraction and reanalysis of the sample by the laboratory and/or additional data quality review. The samples from the following monitoring locations were re-extracted and re-analysed by the laboratory: MW304, MW051, MW321, MW052, MW387 and MW462. All originally reported results were confirmed through re-extraction and re-analysis. Due to unexpected results during the initial sampling event, a second sampling event was undertaken in November 2023 to confirm the initial results. Resampling of MW321 and MW052 was taken before and after purging the wells (sampled twice in November). MW051 and MW359 were also resampled to provide additional delineation data up and down-gradient of MW321.
Standard Procedures	Fieldwork procedures are detailed in the report and followed the work methods outlined in the SAQP.

QA/QC Aspects	Evidence and Evaluation
Qualified Personnel	Staff involved in managing and reviewing the project and those involved in fieldwork are qualified personnel.
Volatile Losses	Volatile losses are not applicable to PFAS.
Sample Integrity	Field Chain of Custody forms are included in Appendix C of this report and demonstrate sample integrity.
Data Completeness	
Completeness of Test Program	The scope of work undertaken was generally consistent with that set out in the SAQP. Variations to the SAQP are detailed in the Factual Report.
Validity of Data Set	The data quality review indicates no significant systematic errors in the data collection process for surface water, groundwater or sediment and therefore, the data set used as the basis for the assessment is considered valid and complete.

APPENDIX

F

INFORMATION ABOUT ENVIRONMENTAL REPORTS

About Site Environmental Assessment Reports

1. Introduction

This document explains the Environmental Site Assessment (ESA) process and the context that applies to the use of Environmental Reports issued by Cardno now Stantec.

2. What is an ESA?

Environmental Site Assessments (ESA) are undertaken for a range of purposes, specific to the brief issued by the client in each case. The scope may include one or a combination of any of the following:

- A factual report of the condition of a portion of the site or one aspect of an entire site.
- Assessment of the contamination levels in soil to be removed from a site – a waste classification assessment.
- Validation of the success of remediation of a site or a portion of a site.
- Provision of a professional opinion about the suitability of a site for one or more uses, in terms of its contamination status.

The scope of any ESA needs to be defined at the outset.

An ESA is not an Environmental Audit. Such audits are undertaken in accordance with the provisions of regulations enacted in various states of Australia, and are referred to as Site Audits in some jurisdictions. Statutory audits provide certification by EPA accredited auditors that a site is suitable for one or more uses. An ESA may provide similar advice but cannot be used in place of an audit if the latter is required by regulation in any instance. However in some circumstances and jurisdictions an ESA is sufficient to provide "environmental sign-off" of a site.

An ESA may be undertaken for due diligence purposes, to establish whether the site has been impacted to the extent that some beneficial uses of the site may be precluded. Due diligence audits in many cases may be completed as non-statutory Audits, although in some jurisdictions they can also be statutory audits, if defined as such at the outset.

3. The ESA Process

The Client generally initiates the ESA process by specifying a brief which identifies the specific objectives of the assessment. If not, it is the consultants' duty to so specify the ESA

In the case of an ESA to provide an opinion about the suitability of the site for use, it would be conducted in accordance with NEPM (Site Assessment). Such ESA would not commence until a thorough site history assessment (Phase 1 Assessment: to identify the potential for significant contamination at a site) is conducted. However, where the history is unclear, a broad screening of chemical parameters can be used to test environmental media. This normally includes a broad range of organic and inorganic compounds and elements, often referred to as an Environmental Screen.

(In the case of an ESA for a purpose other than to provide an opinion about the suitability of the site for use, it is not always necessary to undertake a Phase 1 assessment.)

The ESA requires sampling of soil at representative locations across the site. A NATA accredited laboratory performs the analysis of soil. It is impractical for all of the soil to be assessed. The ESA is often based on a statistical method of grid or random sampling, augmented by targeted sampling at locations known or suspected to be contaminated. Guidance on sampling strategy and density is provided in Australian Standard AS4482.1–2005. However, some considerable degree of judgement is still required in the application of any sampling and testing strategy. For example the blanket application of the "hot spot" method presented in this standard is often inappropriate given its limitations.

The field program also investigates the likelihood of contamination below the site surface. Field investigations must sample and test fill as well as the natural soils. If contamination is found then it is common for further work to be undertaken to characterise, to the extent practical, its vertical and horizontal extent. However, where fill is encountered and testing shows it to be uncontaminated, it must be realised that the heterogeneous nature of the material might mean that not all pockets of contaminated material can be detected using normal sampling regimes.

EPA guidelines for auditors, that may be relevant for an ESA, indicate the need in all cases to consider the potential for groundwater contamination in any site. This does not mean all sites need to be drilled to sample groundwater, but it is most often the case. Most hydrogeological settings and groundwater conditions are complex and vary in space and time. The condition of groundwater is investigated to identify if any beneficial use or environmental value of groundwater is precluded due to contamination.

As previously stated for soil, all groundwater at the site cannot be tested. The environmental investigations are conducted in accordance with industry standards and guidelines (e.g. EPA Vic Pub 668). This provides a level of confidence that a sufficiently comprehensive assessment of the groundwater at the site is achieved.

Where an investigation shows that groundwater is polluted, consideration should be given to assessing the risks and the need for and practicality of any clean up.

4. Environmental Assessment Report

The ESA Report details the findings of the ESA. It provides summary information on the site definition, the reasons for the assessment and other relevant facts. It reviews the scope and quality of the site investigations, laboratory testing and data analyses undertaken. These reports also present a review of the contamination status of the site, the need for any further clean up, and an opinion on the suitability of the site for a range of beneficial uses and land uses such as "residential – low density", "commercial" etc, as appropriate.

However, as noted above, some ESA have a narrow scope such as for classification of waste soil for removal from site, and do not make conclusions on suitability of site for use.

The ESA Report generally includes copies of other documents and reports, necessary to support the assessment findings, presented as appendices. These can contain more detailed information than the body of the ESA Report. Care should be taken to also read the appended documents and the ESA report in full.

Cardno now Stantec generally issues reports in electronic form (e-Report) on CD ROM. ESA Reports are issued in this format as Adobe Acrobat™ PDF files. However, a paper copy of the executive summary of the ESA Report is generally issued to the client, and others as required by the brief or by regulation.

5. Limitations of Environmental Assessment Report

The ESA Report is prepared in a manner that can be easily read by a lay person with a legitimate interest in the contamination status of the site, such as the site owner or occupier, EPA and Local Planning Authority. The ESA report is not intended for use by other parties or for other purposes. Anyone who uses the assessment report for purposes other than specified in the report, does so at their own risk.

The site should only be used for one or more of the beneficial uses and land uses identified in the ESA as suitable.

The conditions and qualifications may apply to the suitability of the site for use, and it is the responsibility of the Client to be cognizant of and accept these in accepting the report. Cardno now Stantec are only responsible for the issuing of the ESA report but accepts no liability for the costs incurred in the implementation of ESA findings.

The ESA provides a "snapshot" of the site conditions at the time of the site investigation. Consequently, the report may not be valid at a later time if there has been any change to the contamination status of the site in that time. Verification of the status of the site may be required in cases where a significant time has elapsed, or site conditions have changed since the assessment and audit.

The ESA is necessarily limited by constraints such as time, cost and available information; although normal professional practice at the time has been applied with all due care to prepare the report. A necessary requirement of this process is the horizontal and vertical interpolation of data from discrete locations. However, site conditions are generally not homogenous and some discrepancies will occur between the actual and predicted results at locations not directly sampled. There is a risk that contamination may occur at the site and not be identified by a competent investigation and assessment. The approach adopted in sampling (a combination of statistically based grid and judgmental sampling) seeks to reduce, but cannot eliminate, this risk.

Where unexpected occurrences of contamination arise, subsequent to the issue of the ESA Report, Cardno now Stantec should be permitted to make an interpretation of these facts in relation to the ESA Report findings. Consequently, the Client should inform Cardno now Stantec and seek their opinion. Cardno now Stantec accepts no liability for costs incurred due to such unexpected

occurrences, given the inherent uncertainties in the assessment process.

Cardno now Stantec uses information provided by other parties as the basis for the ESA, and reliance on this information is at the discretion of Cardno now Stantec. However, however Cardno now Stantec cannot guarantee any of the facts, findings or conclusions presented by other parties. Cardno now Stantec will not be liable for the use of information, provided by others that is subsequently found to be intentionally misleading.

The ESA Report is not and does not purport to be anything other than a contaminated land ESA. It is not a geotechnical report and bore logs reproduced are for interpretation of the likely distribution of contamination. They are not intended for geotechnical interpretations and may not be adequate for this purpose.

The ESA Report is not intended to be a comprehensive analysis of the presence and associated risk of asbestos in buildings and services. Where asbestos in buildings and services is known or likely, the report may only caution that an appropriately qualified person be engaged to undertake demolition to avoid contamination of the site.

Cardno now Stantec

19 August 2022

Appendix H Summary of Sample Event Variation from OMP SAQP

Tables have been provided on the following pages detailing the sample event variations from the OMP SAQP (Stantec 2024b), generally as specified in Stantec's Factual Reports (see **Appendix C** through **Appendix G**). JBS&G commentary has been provided where relevant. Variations relating to groundwater have been provided in **Table H.1**, surface water in **Table H.2** and sediment in **Table H.3**.

©JBS&G Australia Pty Ltd

Table H.1: Deviations from OMP SAQP – Groundwater

Location	Deviation	Comments	Impact on Existing Dataset & Program
Sampling Event 1 – November 2021			
MW020	Alternate sampling method	Bailer sample due to insufficient water for HydraSleeve™ deployment.	Minimal impact – samples taken during the DSI (Golder 2018) in 2017 employed low flow micropurge air bladder pump. Sampling technique has differed however this is considered unlikely to affect the reported concentrations. JBS&G also considers this minimal impact as analytical results are similar in E1 when compared to subsequent sampling rounds where HydraSleeve™ has been used.
MW315	Alternate sampling method	Bailer sample due to insufficient water for HydraSleeve™ deployment.	No impact – last sampled in 2017 for DSI (Golder 2018) and a bailer was employed due to insufficient water for HydraSleeve™ deployment.
MW317	Not Sampled	Bore dry	Low impact – previously sampled in 2017 during the DSI (Golder 2018). Reported concentrations were above the LOR for Sum of PFHxS+PFOS and below the LOR for PFOA. Reported concentrations were below the drinking water assessment criteria reported in the 2017 sampling. The closest downgradient well MW315 (approx. 15 m northeast of MW317) reported concentrations below the LOR for PFOA and Sum of PFHxS+PFOS. Both MW315 and MW317 are located within Source Area 2. Groundwater is located greater than 20 mbgl and no groundwater extraction is occurring near Source Area 2.
MW318	Not Sampled	Bore dry	Low impact – well was dry during the DSI (Golder 2018). Downgradient well MW315 reported concentrations below the LOR for PFOA and Sum of PFHxS+PFOS. Both MW315 and MW318 are located within Source Area 2. Groundwater is located greater than 20 mbgl and no groundwater extraction is occurring nearby Source Area 2.
MW345	Alternate sampling method	Bailer sample due to insufficient water for HydraSleeve™ deployment.	Minimal impact – DSI (Golder 2018) employed low flow micropurge air bladder pump sampling technique. Sampling technique has differed however this is considered unlikely to affect the reported concentrations. JBS&G also considers this minimal impact as analytical results are similar in E1 when compared to subsequent sampling rounds where HydraSleeve™ has been used.
MW353	Alternate sampling method	Bailer sample due to insufficient water for HydraSleeve™ deployment.	Minimal impact – DSI (Golder 2018) employed low flow micropurge air bladder pump sampling technique. Sampling technique has differed however this is considered unlikely to affect the reported concentrations. JBS&G also considers this minimal impact as analytical results are similar in E1 when compared to subsequent sampling rounds where HydraSleeve™ has been used.

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
OTH019	Alternate sampling method	No monitoring well access, sample collected from tap following purging of bore by way of running tap for 1 minute.	No impact – First sampling of location, no historical data with differing sampling method. Ongoing sampling method is expected to be consistent. JBS&G also consider this to be no impact as this sampling method has been consistent throughout OMP.
Sampling Event 2 – May 2022			
OTH019	Alternate sampling method	No monitoring well access, sample collected from tap following purging of bore by way of running tap for 1 minute.	No impact – sample method has been consistent throughout OMP. JBS&G also consider this to be no impact as this sampling method has been consistent throughout OMP.
Sampling Event 3 – October 2022			
MW315	Not sampled	Location dry	Data gap. Well dry, no water evident with interface probe (IP). Confirmed with bailer. This is considered to have a minor impact on the dataset as downstream locations have been sampled in this event and concentrations have previously been less than the LOR. JBS&G note that this well was last sampled by bailer (as insufficient water for HydraSleeve™ deployment) in November 2021 and would be dry for all sampling events through to E5. This is considered to have a minor impact on the dataset as downgradient well MW313 was sampled during E3 and subsequent events and concentrations at MW315 have previously been less than the LOR.
MW317	Not sampled	Location dry	Data gap. Well dry, no water evident with IP. Confirmed with bailer. This is considered to have a minor impact on the dataset as the well has been dry historically, downstream locations were sampled in this event and concentrations have previously been below health based guidance values. JBS&G consider this to be low impact. MW317 would consistently be dry throughout sampling events E1 through E5 however immediately downgradient well MW315 reported concentrations below the LOR for PFOA and Sum of PFHxS+PFOS when sampled in 2017 and November 2021. Groundwater is located greater than 20 mbgl and the closest registered groundwater extraction bore is approximately 1.2 km northwest.
MW318	Not sampled	Location dry	Data gap. Well dry, no water evident with IP. Confirmed with bailer. This is considered to have a minor impact on the dataset as the well has been dry historically and never been sampled previously and downstream locations were sampled in this event. JBS&G consider this to be low impact. MW318 would consistently be dry throughout sampling events E1 through E5 however immediately downgradient well MW315

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
			reported concentrations below the LOR for PFOA and Sum of PFHxS+PFOS when sampled in 2017 and November 2021. Groundwater is located greater than 20 mbgl and the closest registered groundwater extraction bore is approximately 1.2 km northwest.
MW326	Not sampled	Obstruction in well	Data gap. Field crew attempted to clear the blockage again but were unsuccessful. This is considered to have a moderate impact on the dataset as well MW326 is considered to be a critical location by the Lead Consultant (JBS&G). However, wells MW325 and MW328 were sampled as replacements to provide data upgradient and downgradient of MW326. JBS&G consider this low impact given the additional sampling completed within Source Area 6. It is further noted that this location was decommissioned and replaced by installation of new well MW416 prior to the May 2023 sampling event (E4).
MW356	Not sampled	Location inaccessible/safety hazard	Data gap. Area completely flooded and a high flow from the Kiewa River made the location a safety risk. This is considered to have a minor impact on the dataset as downstream locations were sampled and concentrations have previously been below health based guidance values.
OTH019	Sampled in second visit	Location inaccessible during first event	Location was inaccessible during first event. Sampled 10 November 2022 in second visit to site. This is considered to have no impact on the dataset as the location was sampled in the second visit to site and concentrations were consistent with previous sampling.
MW313, MW319 and MW321	Gauging data not available	Due to a software malfunction, the gauging data for these three wells was lost.	This is considered to have a minor impact on the dataset as gauging data was able to be recorded for all other wells and inferred groundwater flow direction was generally consistent with previous events.
All wells	A single gauging round at the start of the event was not completed	Limited access to monitoring well locations due to training exercises occurring on-base and flooding affecting access to various areas.	This is considered to have a minor impact on the dataset. Gauging was completed across a single day within each area of the Site and the inferred groundwater flow directions were generally consistent with previous events.
Sampling Event 4 – May 2023			
No deviations from the SAQP pertaining to groundwater were identified during this sampling event.			
Sampling Event 5 – October 2023			
MW051	Resampled during resampling event	Resampled due to new exceedance	Location reported a new exceedance of drinking water criteria of Sum of PFHxS+PFOS. Location is downgradient from MW321 where elevated

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
			concentrations were also reported. Resampling in November 2023 was undertaken to confirm October 2023 results. JBS&G note that the November 2023 resampling result was similar to the original October 2023 result.
MW052	Resampled during resampling event	Resampled due to unexpected results	Location reported an increase of Sum of PFHxS+PFOS results from 19.5 µg/L in May 2023 to 174 µg/L in October 2023. Resampling in November 2023 was undertaken to confirm October 2023 results. JBS&G note that the November 2023 resampling result was approximately an order of magnitude less than the original October 2023 result.
	Purging and resampling of well during resampling event	Unexpected results	After initial resampling in November 2023, the well was purged via bailing 3 bore volumes (30 L removed) and resampled for the second time after 24 hours. JBS&G note that the two samples collected in November 2023 (i.e. prior to and post bailing) produced similar results.
MW056	Not Sampled	Wrong location (BH157) was mistakenly sampled instead of MW056	Nested well screened in the regional aquifer was mistakenly sampled instead of MW056 targeting the perched water. The two wells are located adjacent to each other, were of similar appearance and the label on the gatics appeared to have worn out. This is considered to be a potential data gap as it is the only well targeting the perched groundwater in Source Area 9 and is sampled on an annual basis. However, this is considered to have a minor impact on the dataset as concentrations have previously been stable and below recreational guidance values. It is proposed to sample this location in the bi-annual April 2024 event to address the data gap. Results from BH157 are not included in this report as it is not part of the OMP. JBS&G have reviewed the data from MW056 and also consider it to be relatively stable during the OMP sampling events.
MW315	Not Sampled	Location dry	Location was dry, no water evident with IP. Confirmed with bailer. This is considered to be a potential data gap as all three wells targeting Source Area 2 (MW315, MW317 and MW318) were dry this event. However, downgradient on and off-base locations screened within the same aquifer were sampled during this event, allowing any migration of impacts to be monitored. Location last sampled in the November 2021 sampling event where results were reported below the LOR for Sum of PFHxS+PFOS and PFOA. Location was also sampled during the DSI (Golder 2018). JBS&G note that this well was last sampled by bailer (as insufficient water for HydraSleeve™ deployment) in November 2021 and would be dry for all sampling events through to E5. This is considered to have a minor impact on the dataset as

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
			downgradient well MW313 was sampled during E3 and subsequent events and concentrations at MW315 have previously been less than the LOR.
MW317	Not Sampled	Location dry	Location was dry, no water evident with IP. Confirmed with bailer. This is considered to be a potential data gap as all three wells targeting Source Area 2 (MW315, MW317 and MW318) were dry this event. However, downgradient on and off-base locations screened within the same aquifer were sampled during this event, allowing any migration of impacts to be monitored. The well has been dry historically throughout the OMP, location was last sampling during the DSI (Golder 2018) where concentrations were reported above the LOR for Sum of PFHxS+PFOS but below health based guidance values. JBS&G consider this to be low impact. MW317 would consistently be dry throughout sampling events E1 through E5 however immediately downgradient well MW315 reported concentrations below the LOR for PFOA and Sum of PFHxS+PFOS when sampled in 2017 and November 2021. Groundwater is located greater than 20 mbgl and the closest registered groundwater extraction bore is approximately 1.2 km northwest.
MW318	Not Sampled	Location dry	Location was dry, no water evident with IP. Confirmed with bailer. This is a potential data gap as the location has not been sampled previously as it has always been found to be dry (during DSI (Golder 2018) and OMP). However, this is not considered to have a significant impact on the dataset as the downgradient locations were sampled during this event and previous events. JBS&G consider this to be low impact. MW318 would consistently be dry throughout sampling events E1 through E5 however immediately downgradient well MW315 reported concentrations below the LOR for PFOA and Sum of PFHxS+PFOS when sampled in 2017 and November 2021. Groundwater is located greater than 20 mbgl and the closest registered groundwater extraction bore is approximately 1.2 km northwest.
MW321	Resampled during resampling event	Resampled due to unexpected results	Location reported an increase of Sum of PFHxS+PFOS results from 0.75 µg/L in October 2022 to 1,180 µg/L in October 2023. Resampling in November 2023 was undertaken to confirm October 2023 results. JBS&G note that the November 2023 resampling result was approximately half the concentration of the original October 2023 result.
	Purging and resampling of well during resampling event	Unexpected results	After resampling in November 2023, the well was purged via bailing dry (30 L removed) and resampled for the second time after 24 hours. JBS&G note that the two samples collected in November 2023 (i.e. prior to and post bailing) produced similar results.

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
MW359	Sampled during resampling event	Non-OMP well sampled during resampling event	Well MW359 was sampled during November resampling to provide additional delineation data upgradient of MW321. JBS&G note that MW359 is located to the east of Russell Road, which is not considered to be directly down hydraulic gradient from Source Area 7, which MW321 is targeting. The low PFAS concentrations obtained from sampling MW359 is not considered to significantly assist in explaining the high result in MW321.

Table H.2: Deviations From OMP SAQP – Surface Water

Location	Deviation	Comments	Impact on Existing Dataset & Program
Sampling Event 1 – November 2021			
SW302	Not Sampled	Location dry	Low impact – location dry in 2017 during the DSI (Golder 2018). Surface water is expected to flow north. Surface water was sampled in downgradient locations SW307 and SW310. JBS&G note that SW302 would not be sampled during E1 through E5, however downgradient surface water locations SW307 and SW310 have regularly been sampled, so is considered low impact.
Sampling Event 2 – May 2022			
SW302	Not Sampled	Location dry	Data gap – This is considered to have minor impact on the monitoring program as the downstream locations were also dry during this sampling event. The location was not sampled in the previous event November 2021 as it was dry. JBS&G note that SW302 would not be sampled during E1 through E5, however downgradient surface water locations SW307 and SW310 have regularly been sampled, so is considered low impact.
SW307	Not Sampled	Location dry	Data gap – this is considered to have minor impact on the monitoring program as the location was last sampled in the November 2021 sampling event where a first-time detection and new exceedance of drinking water criteria was reported for Sum of PFHxS+PFOS. Downstream locations have been sampled in this event, noting that downstream locations are off-base. JBS&G consider this to be moderate impact to this sampling event as no data has been able to be obtained for the Source Area 2 surface water catchment, although this data has been captured during other sampling events.
SW310	Not Sampled	Location dry	
SW311	Not Sampled	Location dry	Data gap – this is considered to have minor impact on the monitoring program as the location was last sampled in the November 2021 sampling event where a first-
SW313	Not Sampled	Location dry	

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
			time detection of PFOA and Sum of PFHxS+PFOS and a new exceedance of drinking water criteria was reported for Sum of PFHxS+PFOS. Downstream locations have been sampled in this event, noting that downstream locations are off-base. JBS&G consider this to be moderate impact to this sampling event as no data has been able to be obtained for the Source Area 2 surface water catchment, although this data has been captured during other sampling events.
SW332	Not Sampled	Location dry	Data gap – this is considered to have minor impact on the monitoring program as the location was last sampled in the November 2021 sampling event where results were above the LOR, but below adopted drinking water criteria for Sum of PFHxS+PFOS. Downstream locations have been sampled in this event.
SW340	Not Sampled	Location dry	Data gap – this is considered to have minor impact on the monitoring program as the location was last sampled in the November 2021 sampling event where results were above the adopted drinking water criteria for Sum of PFHxS+PFOS and PFOA, consistent with 2017 concentrations. Downstream locations have been sampled in this event, noting that downstream locations are off-base.
SW379	Not Sampled	Location dry	Data gap – this is considered to have minor impact on the monitoring program as the location was last sampled in the November 2021 sampling event where a first-time detection of PFOA and Sum of PFHxS+PFOS and a new exceedance of drinking water criteria was reported for Sum of PFHxS+PFOS. No downstream locations present in OMP.
SW380	Not Sampled	Location dry	Data gap – this is considered to have minor impact on the monitoring program as the location was last sampled in the November 2021 sampling event where a first-time detection and new exceedance of adopted drinking water criteria was reported for Sum of PFHxS+PFOS. Downstream location (SW379) not sampled this event. JBS&G note however that further downstream on-base locations SW387 and SW388 were sampled in this event.
SW448	Not Sampled	Location dry	Data gap – this is considered to have minor impact on the monitoring program as the location was last sampled in the November 2021 sampling event where results were reported above the LOR for PFOA and Sum of PFHxS+PFOS and above the adopted drinking water criteria for Sum of PFHxS+PFOS and PFOA. Downstream locations have been sampled in this event.
Sampling Event 3 – October 2022			
SW302	Not Sampled	Location dry	Data gap. Location was dry, checked after the rainfall event and still dry. This is considered to have a minor impact on the dataset as the downstream locations

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
			were sampled during this event. The location has not been sampled previously as it has always been found to be dry. JBS&G note that SW302 would not be sampled during E1 through E5, however downgradient surface water locations SW307 and SW310 have regularly been sampled, so is considered low impact.
SW393	Sampled in second visit	Location inaccessible/safety hazard during first event	During initial sampling in October, the area was flooded and unsafe to access. Road had been closed due to the flood water. An aggressive brown snake was also encountered while investigating the potential to walk to the location. Location sampled 10 November in second visit to site when area was no longer flooded and safe to access. This is considered to have a minor impact on the dataset as the location was sampled in the second visit and concentrations reported are consistent with previous sampling.
SW395	Sampled in second visit	Location inaccessible/safety hazard during first event	Location unable to be sampled during initial visit due to flooding in the area. Location sampled 10 November in second visit to site when area was no longer flooded and safe to access. This is considered to have a minor impact on the dataset as the location was sampled in the second visit and while PFOS and Sum of PFHxS+PFOS concentrations have increased to a new maximum, they are still comparable and within the same order of magnitude as historical concentrations.
Sampling Event 4 – May 2023			
SW302	Not Sampled	Location dry	Location was dry, checked after the rainfall event and was still dry. This is a potential data gap as the location has not been sampled previously as it has always been found to be dry (during DSI (Golder 2018) and OMP). However, this is not considered to have a significant impact on the dataset as the downstream locations were sampled during this event and previous events. JBS&G note that SW302 would not be sampled during E1 through E5, however downgradient surface water locations SW307 and SW310 have regularly been sampled, so is considered low impact.
SW307	Not Sampled	Location dry	Location was dry, checked after the rainfall event and was still dry. This is considered to have a minor impact on the dataset as downstream on-base locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the limit of detection for Sum of PFHxS+PFOS and above the adopted drinking water criteria for Sum of PFHxS+PFOS. Location was also sampled in November 2021 (E1).

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
SW379	Not Sampled	Location dry	Location was dry, checked after the rainfall event and was still dry. This is considered to have a minor impact on the dataset as the downstream on-base locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the limit of detection for Sum of PFHxS+PFOS and above the adopted drinking water criteria for Sum of PFHxS+PFOS. Location was also sampled in November 2021 (E1).
SW388	Not Sampled	Location dry	Location was dry, checked after the rainfall event and was still dry. This is considered to have a very minor impact on the dataset as the downstream off-base locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the limit of detection for Sum of PFHxS+PFOS and above the adopted drinking water criteria for Sum of PFHxS+PFOS. Location was also sampled in all other previous OMP events and during the DSI (Golder 2018).
Sampling Event 5 – October 2023			
SW302	Not sampled	Location dry	Location was dry. This is a potential data gap as the location has not been sampled previously as it has always been found to be dry (during DSI (Golder 2018) and OMP). However, this is not considered to have a significant impact on the dataset as the downstream locations were sampled during this event and previous events. JBS&G note that SW302 would not be sampled during E1 through E5, however downgradient surface water locations SW307 and SW310 have regularly been sampled, so is considered low impact.
SW307	Not sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as downstream on-base locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for Sum of PFHxS+PFOS. Location was also sampled in November 2021 (E1).
SW310	Not sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as downstream on-base and off-base locations were sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for Sum of PFHxS+PFOS. Location was also sampled in three of the four previous OMP events.
SW311	Not sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as downstream off-base locations were sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
			LOR, above the adopted drinking water criteria and below recreational water criteria for Sum of PFHxS+PFOS. Location was also sampled in three of the four previous OMP events.
SW316	Not sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as downstream off-base locations were sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the LOR for Sum of PFHxS+PFOS, above the adopted drinking water criteria and below recreational water criteria for Sum of PFHxS+PFOS. Location was also sampled in three of the four previous OMP events and during the DSI.
SW332	Sampled during resampling event	Location dry during initial OMP event	Location was found to be dry during the October 2023 sampling event. During the resampling event in November 2023, SW332 was observed to contain water and was sampled.
SW333	Sampled during resampling event	Location dry during initial OMP event	Location was found to be dry during the October 2023 sampling event. During the resampling event in November 2023, SW333 was observed to contain water and was sampled.
SW379	Not sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as one downstream on-base location was sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for Sum of PFHxS+PFOS. Location was also sampled in November 2021 (E1).
SW380	Not sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as one downstream on-base location was sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for Sum of PFHxS+PFOS. Location was also sampled in three of the four previous OMP events and during the DSI (Golder 2018).
SW388	Not sampled	Location dry	Location was dry. This is considered to have a very minor impact on the dataset as the downstream off-base locations were sampled during this event. Location last sampled in the October 2022 sampling event where results were reported above the LOR, above the adopted drinking water criteria and below recreational water criteria for Sum of PFHxS+PFOS. Location was also sampled in all other previous OMP events and during the DSI (Golder 2018).
SW448	Not sampled	Location dry	Location was dry. This is considered to have a minor impact on the dataset as the downstream on-base locations were sampled during this event. Location last sampled in the May 2023 sampling event where results were reported above the

©JBS&G Australia Pty Ltd

Location	Deviation	Comments	Impact on Existing Dataset & Program
			LOR for Sum of PFHxS+PFOS and PFOA and above the adopted drinking water criteria and recreational water criteria for Sum of PFHxS+PFOS. Location was also sampled in three of the four previous OMP events and during the DSI (Golder 2018).

Table H.3: Deviations From OMP SAQP – Sediment

Location	Deviation	Comments	Impact on Existing Dataset & Program
No deviations from the OMP SAQP have been identified for sediment in any of the sampling events reviewed as part of the OMR.			

©JBS&G Australia Pty Ltd

Appendix I Water Quality Parameter Tables

©JBS&G Australia Pty Ltd

Table I.1: On-base Groundwater Physiochemical Field Parameters

Event	pH	Dissolved Oxygen (DO) (mg/L)	Electrical Conductivity (EC) (µS/cm)	Total Dissolved Solids (TDS)[1] (mg/L)	Oxidation Reduction Potential (ORP) (mV)
Shepparton Colluvium – Perched – On-base					
E1	6.84 (MW056)	3.90 (MW056)	435 (MW056)	282.4 (MW056)	124.3 (MW056)
	Neutral conditions	*Poor aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E3	6.91 (MW056)	5.65 (MW056)	284 (MW056)	184.7 (MW056)	-2.9 (MW056)
	Neutral conditions	*Good aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic conditions*
Shepparton Colluvium – Shallow – On-base					
E1	5.75 (MW323) – 7.06 (MW342)	0.50 (MW342) – 4.67 (MW329)	1,022 (MW319) – 15,525 (MW304)	664.3 (MW319) – 10,091.2 (MW304)	58.6 (MW321) – 221.9 (MW311)
	Slightly acidic to neutral	*Hypoxic to poor aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Moderately reducing to oxidising conditions*
E2	6.89 (MW304) – 9.97 (MW307)	0.97 (MW342) – 3.44 (MW304)	2,252 (MW342) – 12,190 (MW304)	1,463.8 (MW342) – 7,923.5 (MW304)	-150.4 (MW304) – 161.2 (MW307)
	Slightly acidic to moderately alkaline	*Hypoxic to poor aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Anaerobic to moderately reducing conditions*
E3	5.57 (MW323) – 10.39 (MW342)	1.69 (MW307) – 14.90 (MW323)	331.6 (MW328) – 13,433 (MW304)[2]	215.6 (MW328) – 8,731.5 (MW304)[2]	-38.4 (MW342) – 267.3 (MW328)
	Slightly acidic to strongly alkaline	*Hypoxic to excellent aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Anaerobic to oxidising conditions*
E4	6.19 (MW307) – 8.13 (MW342)	1.59 (MW304) – 6.36 (MW312)	1,294 (MW416) – 13,567 (MW304)	841.1 (MW416) – 8,818.6 (MW304)	-30.3 (MW307) – 157.1 (MW312)
	Slightly acidic to neutral	*Hypoxic to good aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Anaerobic to moderately reducing conditions*
E5	5.61 (MW323) – 10.17 (MW342)	0.59 (MW321) – 4.63 (MW329)	762 (MW319/342) – 12,233 (MW304)	495.3 (MW319/342) – 7,951.5 (MW304)	-46.1 (MW051) – 128.3 (MW321)
	Slightly acidic to strongly alkaline	*Hypoxic to poor aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Anaerobic to moderately reducing conditions*
Shepparton and Coonambidgal Fluvium – Shallow – On-base					
E1	5.57 (MW029) – 6.77 (MW345)	0.49 (MW351) – 4.12 (MW350_S)	126 (MW052) – 10,886 (MW345)	81.9 (MW052) – 7,075.9 (MW345)	-38.4 (MW345) – 204.6 (MW346)
	Slightly acidic to neutral	*Hypoxic to poor aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Anaerobic to oxidising conditions*
E2	5.83 (MW403) – 6.59 (MW346)	0.46 (MW016) – 6.77 (MW350_S)	130 (MW029) – 7,215 (MW345)	84.7 (MW029) – 4,689.8 (MW345)	-256.8 (MW035) – 219.4 (MW346)
	Slightly acidic to neutral	*Hypoxic to good aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Anaerobic to oxidising conditions*
E3	5.58 (MW052) – 6.46 (MW016/018)	1.30 (MW052) – 5.95 (MW350_S)	86 (MW052) – 4,763 (MW345)	55.6 (MW052) – 3,096.0 (MW345)	57.1 (MW020) – 241.7 (MW346)
	Slightly acidic	*Hypoxic to good aerobic conditions*	*Freshwater to brackish water*	*Freshwater to brackish water*	*Moderately reducing to oxidising conditions*
E4	5.46 (MW052) – 6.44 (MW345)	1.31 (MW052) – 5.83 (MW029)	114 (MW052) – 9,049 (MW345)	74.2 (MW052) – 5,881.9 (MW345)	-71.1 (MW354) – 199.6 (MW029)
	Moderately to slightly acidic	*Hypoxic to good aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Anaerobic to moderately reducing conditions*
E5	5.72 (MW052) – 7.12 (MW016)	0.71 (MW016) – 4.63 (MW329)	113 (MW052) – 6,714 (MW345)	73.4 (MW052) – 4,364.1 (MW345)	-36.0 (MW345) – 183.3 (MW029)
	Slightly acidic to neutral	*Hypoxic to poor aerobic conditions*	*Freshwater to saline water*	*Freshwater to saline water*	*Anaerobic to moderately reducing conditions*
Shepparton and Coonambidgal Fluvium – Intermediate – On-base					
E1	5.76 (MW046_I) – 6.04 (MW009)	0.66 (MW046_I) – 2.37 (MW009)	207 (MW009) – 387 (MW042)	134.3 (MW009) – 251.2 (MW042)	127.2 (MW042) – 140.4 (MW009)
	Slightly acidic	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E2	6.09 (MW046_I) – 6.21 (MW009)	0.44 (MW046_I) – 0.76 (MW009)	279 (MW042) – 399 (MW046_I)	181.2 (MW042) – 259.2 (MW046_I)	-229.4 (MW042) – 144.1 (MW009)
	Slightly acidic	*Hypoxic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to moderately reducing conditions*
E3	5.96 (MW042) – 6.30 (MW009)	0.88 (MW042) – 4.32 (MW009)	303 (MW042) – 334 (MW046_I)	196.8 (MW042) – 216.9 (MW046_I)	142.5 (MW042) – 155.1 (MW046_I)
	Slightly acidic	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E4	5.80 (MW042) – 6.28 (MW009)	1.30 (MW046_I) – 3.60 (MW009)	266 (MW009) – 293 (MW046_I)	172.9 (MW009) – 190.6 (MW046_I)	153.3 (MW009) – 169.7 (MW042)
	Slightly acidic	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E5	6.02 (MW009) – 6.37 (MW046_I)	0.90 (MW042) – 1.77 (MW046_I)	235 (MW042) – 301 (MW009)	152.7 (MW042) – 195.9 (MW009)	88.4 (MW046_I) – 169.7 (MW042)
	Slightly acidic	*Hypoxic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*

©JBS&G Australia Pty Ltd

Event	pH	Dissolved Oxygen (DO) (mg/L)	Electrical Conductivity (EC) (µS/cm)	Total Dissolved Solids (TDS)[1] (mg/L)	Oxidation Reduction Potential (ORP) (mV)
Shepparton and Coonambidgal Fluvium – Deep – On-base					
E1	5.89 (MW046_D)[3]	1.82 (MW046_D) – 2.05 (MW350_D)	289 (MW350_D) – 328 (MW046_D)	187.7 (MW350_D) – 213.3 (MW046_D)	121.6 (MW046_D) – 193.7 (MW350_D)
	Slightly acidic	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E2	6.18 (MW046_D) – 6.25 (MW350_D)	0.80 (MW350_D) – 3.58 (MW046_D)	219 (MW350_D) – 388 (MW046_D)	142.4 (MW350_D) – 252.2 (MW046_D)	-214.7 (MW350_D) – 106.4 (MW046_D)
	Slightly acidic	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to moderately reducing conditions*
E3	6.08 (MW046_D) – 6.26 (MW350_D)	1.65 (MW046_D) – 22.4 (MW350_D)	237 (MW350_D) – 336 (MW046_D)	154.3 (MW350_D) – 218.1 (MW046_D)	185.7 (MW046_D) – 227.8 (MW350_D)
	Slightly acidic	*Hypoxic to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing to oxidising conditions*
E4	5.85 (MW046_D) – 6.06 (MW350_D)	0.81 (MW046_D) – 2.96 (MW350_D)	251 (MW350_D) – 287 (MW046_D)	163.3 (MW350_D) – 186.8 (MW046_D)	157.9 (MW046_D) – 170.9 (MW350_D)
	Slightly acidic	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E5	6.35 (MW046_D) – 6.49 (MW350_D)	1.54 (MW046_D) – 1.94 (MW350_D)	212 (MW350_D) – 244 (MW046_D)	138.1 (MW350_D) – 158.6 (MW046_D)	91.8 (MW046_D) – 179.2 (MW350_D)
	Slightly acidic	*Hypoxic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*

Notes:

1. EC in µS/cm converted to TDS in mg/L by multiplying by 0.65.
2. Stantec report identifies the result for MW321 (15.21 mg/L) to be potentially anomalous, as it is not consistent with other historic values nor surrounding wells. It has been excluded from this summary table.
3. The pH value recorded for MW350_D (pH 0.27) during this sampling event is not consistent with other historic values nor surrounding wells, and as such has been excluded from this summary table.

©JBS&G Australia Pty Ltd

Table I.2: Off-base Groundwater Physiochemical Field Parameters

Event	pH	DO (mg/L)	EC (µS/cm)	TDS[1] (mg/L)	ORP (mV)
Shepparton Colluvium – Shallow – Off-base					
E1	6.29 (MW361) – 7.24 (MW360)	0.41 (MW360) – 0.86 (MW361)	471 (MW361) – 1,821 (MW360)	306.0 (MW361) – 1,183.7 (MW360)	45.5 (MW361) – 133.9 (MW360)
	Slightly acidic to neutral	*Hypoxic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E2	6.33 (MW361) – 7.42 (MW360)	1.09 (MW360) – 4.14 (MW361)	476 (MW361) – 629 (MW360)	309.4 (MW361) – 408.9 (MW360)	-135.8 (MW360) – 45.6 (MW361)
	Slightly acidic to neutral	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to moderately reducing conditions*
E3	6.36 (MW361) – 7.52 (MW360)	0.57 (MW313) – 3.76 (MW361)	184 (MW361) – 1,064 (MW313)	119.8 (MW361) – 691.6 (MW313)	-14.2 (MW313) – 167.1 (MW361)
	Slightly acidic to neutral	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to moderately reducing conditions*
E4	6.17 (MW361) – 7.03 (MW360)	4.12 (MW361) – 4.13 (MW360)	316 (MW361) – 918 (MW360)	205.5 (MW361) – 596.7 (MW360)	107.3 (MW361) – 155.6 (MW360)
	Slightly acidic to neutral	*Poor aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E5	6.30 (MW361) – 7.38 (MW360)	1.09 (MW361) – 1.91 (MW360)	329 (MW361) – 640 (MW360)	213.9 (MW361) – 416.0 (MW360)	25.4 (MW360) – 43.3 (MW361)
	Slightly acidic to neutral	*Hypoxic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
Shepparton and Coonambidgal Fluvium – Shallow – Off-base					
E1	6.07 (MW356) – 6.40 (MW357)	0.72 (MW356) – 2.97 (MW357)	202 (MW357) – 529 (MW356)	131.4 (MW357) – 343.5 (MW356)	3.8 (MW357) – 166.9 (MW356)
	Slightly acidic	*Hypoxic to poor aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E2	6.36 (MW356) – 6.45 (MW357)	2.61 (MW356) – 3.34 (MW357)	156 (MW357) – 190 (MW356)	101.5 (MW357) – 123.3 (MW356)	-21.7 (MW357) – -9.9 (MW356)
	Slightly acidic	*Poor aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic conditions*
E3[2]	5.43 (MW357)	1.07 (MW357)	112 (MW357)	73.0 (MW357)	-9.8 (MW357)
	Moderately acidic	*Hypoxic conditions*	*Freshwater*	*Freshwater*	*Anaerobic conditions*
E4	6.10 (MW357) – 6.61 (MW356)	0.70 (MW356) – 1.13 (MW357)	110 (MW356) – 186 (MW357)	71.6 (MW356) – 121.0 (MW357)	-45.7 (MW356) – -30.3 (MW357)
	Slightly acidic to neutral	*Hypoxic conditions*	*Freshwater*	*Freshwater*	*Anaerobic conditions*
E5	5.86 (MW357) – 6.61 (MW356)	1.01 (MW357) – 1.69 (MW356)	55 (MW356) – 203 (MW357)	35.8 (MW356) – 131.8 (MW357)	-61.7 (MW357) – -9.1 (MW356)
	Slightly acidic to neutral	*Hypoxic conditions*	*Freshwater*	*Freshwater*	*Anaerobic conditions*

Notes:

1. EC in µS/cm converted to TDS in mg/L by multiplying by 0.65.
2. MW356 was not sampled during this monitoring event (owing to flooding inaccessibility), so only the results from MW357 can be presented.

©JBS&G Australia Pty Ltd

Table I.3: Surface Water Quality Field Parameters

Event	pH	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	ORP (mV)
On-base					
E1	5.28 (SW336) – 8.96 (SW338)	2.90 (SW349) – 8.08 (SW374)	16 (SW382) – 718 (SW338)	10.1 (SW382) – 466.7 (SW338)	-37.9 (SW338) – 194.4 (SW336)
	Moderately acidic to moderately alkaline	*Poor to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to moderately reducing conditions*
E2	5.97 (SW370) – 8.67 (SW338)[2]	2.34 (SW375) – 8.28 (SW355)	28 (SW333) – 368 (SW338)	18.0 (SW333) – 238.9 (SW338)	-161.5 (SW321) – 216.3 (SW336)
	Strongly acidic to moderately alkaline	*Poor to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to oxidising conditions*
E3	5.46 (SW388) – 8.68 (SW323)	1.37 (SW311) – 9.56 (SW323)	17 (SW380) – 354 (SW111)	11.0 (SW380) – 229.8 (SW311)	-98.7 (SW311) –251.9 (SW336)
	Moderately acidic to moderately alkaline	*Hypoxic to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to oxidising conditions*
E4	6.06 (SW323) – 8.21 (SW338)	3.47 (SW324) – 8.97 (SW374)	18 (SW382) – 408 (SW338)	11.8 (SW382) –264.9 (SW338)	33.6 (SW374) –165.6 (SW448)
	Slightly acidic to moderately alkaline	*Poor to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E5	6.27 (SW332) – 8.51 (SW336)	2.55 (SW332) – 9.74 (SW336)	23 (SW382) – 291 (SW340)	14.7 (SW382) – 188.9 (SW340)	42.1 (SW338) – 188.6 (SW313)
	Slightly acidic to moderately alkaline	*Poor to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
Off-base					
E1	6.41 (SW401) – 7.99 (SW416)	1.99 (SW398) – 8.43 (SW427)	45 (SW463) – 544 (SW396)	29.2 (SW463) –353.7 (SW396)	2.4 (SW431) –197.3 (SW470)
	Neutral to slightly alkaline	*Hypoxic to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E2	6.35 (SW390) – 8.43 (SW397)	1.29 (SW470) – 10.05 (SW393)	29 (SW398) – 797 (SW396)	19.0 (SW398) – 518.1 (SW396)	-264.9 (SW470) – 127.5 (SW462)
	Neutral to slightly alkaline	*Hypoxic to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to moderately reducing conditions*
E3	6.01 (SW462) – 8.14 (SW396)	3.20 (SW403) – 16.60 (SW398)	37 (SW416) – 536 (SW401)	24.1 (SW416) –348.4 (SW401)	-59.6 (SW401) –192.1 (SW400)
	Slightly acidic to slightly alkaline	*Poor to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to moderately reducing conditions*
E4	6.05 (SW424) – 8.11 (SW390)	2.51 (SW401) – 11.85 (SW393)	39 (SW398) – 1,523 (SW462)	25.2 (SW398) – 990.0 (SW462)	28.6 (SW416) – 167.6 (SW393)
	Slightly acidic to slightly alkaline	*Poor to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Moderately reducing conditions*
E5	6.37 (SW463) – 8.17 (SW398)	1.89 (SW427) – 8.95 (SW405)	29 (SW424) – 682 (SW412)	18.6 (SW424) – 443.3 (SW412)	-60.5 (SW430) – 180.3 (SW393)
	Neutral to slightly alkaline	*Poor to excellent aerobic conditions*	*Freshwater*	*Freshwater*	*Anaerobic to moderately reducing conditions*

Notes:

1. EC in µS/cm converted to TDS in mg/L by multiplying by 0.65.
2. The pH reading for SW336 (pH 3.52) during E2 was identified to be particularly low and is not consistent with historical ranges, while other parameters were comparable to the other four events. Based on this, it is considered an anomaly and has been excluded from the table.

©JBS&G Australia Pty Ltd

The following table can be used as a guide for the water quality parameters descriptions provided in **Table I.1** through **Table I.3** above.

Table I.4: Water Quality Parameter Descriptions

Parameter	Description	Reference or Comment
EC	Freshwater: 0–2,500 µS/cm Brackish Water: 2,500–5,000 µS/cm Saline Water: 5,000–50,000 µS/cm Seawater: 50,000 µS/cm	Based on general guidance discussed in Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) Water Quality Guidelines (ANZECC and ARMCANZ 2000).
pH	Acidic: <6.5 Neutral: 6.5–8.5 Alkaline: >8.5	No single national standard, but commonly used ranges from groundwater and wastewater treatment sources.
DO	Hypoxic: <2 mg/L Poor aerobic: 2–5 mg/L Good aerobic: 5–8 mg/L Excellent aerobic: >8 mg/L	Based on Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) and World Health Organisation Guidelines for Drinking-Water Quality (WHO 2022) water quality standards.
ORP	Anaerobic: <0 mV Moderately Reducing: 0–200 mV Oxidising: 200–400 mV Highly Oxidising: >400 mV	No single national standard, but commonly used ranges from groundwater and wastewater treatment sources.

©JBS&G Australia Pty Ltd

© JBS&G
This document is and shall remain the property of JBS&G. The document may only be used for the purposes for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited

Document Distribution

Rev No.	Copies	Recipient	Date
A	1 x Electronic	[redacted]	17 September 2024
B	1 x Electronic		12 November 2024
C	1 x Electronic		24 January 2025
0	1 x Electronic		11 March 2025

Document Status

Rev No.	Author	Reviewer	Approved for Issue		
		Name	Name	Signature	Date
A	[redacted]				17 September 2024
B					12 November 2024
C					24 January 2025
0					11 March 2025

www.jbsg.com.au

JBS&G

Adelaide
Kaurna Country | 100 Hutt St,
Adelaide, SA 5000
T: 08 8431 7113

Brisbane
Turrbal/Yuggera Country | Level 37,
123 Eagle Street, Brisbane, QLD 4000
T: 07 3211 5350

Bunbury
Wardandi Country | 177 Spencer
Street Bunbury, WA 6230
T: 08 9792 4797

Canberra
Ngunnawal Country | Level 1, The Realm
18 National Circuit Barton, ACT 2600
T: 02 6198 3278

Darwin
Larrakia Country | Suite G1, Level 1,
48-50 Smith Street, Darwin NT 0800
T: 08 8943 0600

Hobart
Muwununa/Nuenon Country | L2, 137
Liverpool Street, Hobart TAS 7000
T: 03 6208 3700

Melbourne
Wurundjeri Country | Level 19,
31 Queen Street, Melbourne VIC 3000
T: 03 9642 0599

Newcastle
Awabakal/Worimi Country | 61 / 63
Parry Street Newcastle West, NSW 2302
T: 02 8245 0300

Perth
Whadjuk Country | Allendale Square,
Level 9, 77 St Georges Terrace, WA 6000
T: 08 9380 3100

Sydney
Gadigal Country | Level 1,
50 Margaret Street, Sydney, NSW 2000
T: 02 8245 0300

Wollongong
Dharawal Country | Suite 1A, 280 - 286
Keira Street, Wollongong, NSW 2500
T: 02 4225 2647