ONGOING MONITORING REPORT, JUNE 2023 – APRIL 2024

RAAF Base Darwin

Department of Defence

Reference: 754-MELEN338204_R12

18 September 2024

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Restriction on Disclosure and Use of Data
A copy of the Statement of Limitations pertinent to this report is provided in Appendix F.

EXECUTIVE SUMMARY[1]

Background

The Department of Defence (Defence) historically used per- and poly-fluoroalkyl substances (PFAS) containing aqueous film forming foams (AFFF) in firefighting and fire training activities at Royal Australian Air Force (RAAF) Base Darwin (the base). As a result, PFAS accumulated in soils, and is migrating off the base in groundwater and surface water.

Defence undertook an extensive investigation into PFAS at the base in 2018. This investigation assessed the potential risks PFAS poses to human health and environment both on and around the base. The findings of the investigation led to the preparation of a PFAS Management Area Plan (PMAP), which summarises how Defence plan to manage and reduce PFAS moving off the base. The PMAP also included an ongoing monitoring plan (OMP) to observe changes in PFAS movement as Defence undertook active management and remediation of PFAS.

The OMP explains how groundwater, surface water and biota (fish and crustaceans) are to be sampled at and around the base. The monitoring program includes sampling during both the wet and dry seasons to measure how PFAS movement changes under different climate conditions.

Objective

The OMP objective is to monitor changes in PFAS concentrations and locations at the base and the surrounding areas (as shown on Figure 1, Appendix A). Defence uses the data collected to plan how PFAS is managed to help protect human health and the environment.

PFAS Management Area

The PFAS Management Area (as shown on Figure 1, Appendix A) includes the base and selected off-base areas including communities of Ludmilla, The Narrows and parts of Winnellie, as well as parts of Rapid Creek, Ludmilla Creek, Sadgroves Creek and Reichardt Creek.

Defence manage eleven primary PFAS source areas within the Management Area, which are listed in Section 2.2.

Ongoing Monitoring Report

Tetra Tech Coffey Pty Ltd (Tetra Tech Coffey) was engaged by Defence to prepare this Ongoing Monitoring Report (OMR) on sampling of groundwater, surface water and biota completed by AECOM Pty Ltd (AECOM) in the PFAS Management Area between June 2023 and April 2024 (the 'reporting period') as recommended in the PMAP and the OMP.

This OMR summarises the results of groundwater, surface water and biota sampling undertaken by AECOM, includes comparisons to previously collected data and provides interpretation of the results of the monitoring. The interpretation looks at changes in PFAS concentrations in the Management Area. The sampling events undertaken by AECOM and included in this report include:

- Groundwater monitoring completed in October 2023 and March 2024.
- Biota monitoring completed in October 2023.
- Surface water sampling completed in December 2023 and March 2024.
- Surface water sampling completed in August 2023, January 2024, February 2024 and April 2024 at key locations in addition to the main December 2023 and March 2023 events.

[1] This executive summary must be read in the context of the full report and the attached limitations.

Interpretive analysis

Data collected during the reporting period were compared to historical data for sampling locations included in the OMP.

PFAS concentrations were within the same order of magnitude as historical results, with higher concentrations reported at the PFAS source areas, and lower concentrations outside of these areas. This is consistent with previous sampling results.

Statistical analysis of the results indicates the majority of PFAS concentrations were stable or decreasing. However, PFAS will continue to move from the PFAS contaminated soils in PFAS source areas into groundwater and surface water.

Programs of work are underway to address PFAS source areas and reduce PFAS moving from the base. Remediation was completed at two of the eleven PFAS source areas in 2023 including the Former Fire Training Area 1 (FFTA1) and the AFFF contaminated soil stockpiles (also known as the Wrapped Stockpile Area). Remediation of three additional source areas is planned for 2024 and 2025 including Former Fuel Farm 4 (FFF4), Former Fuel Farm 6 (FFF6), and the Current Fire Training Area (CFTA).

A base-wide PFAS investigation is also being undertaken to plan for remediation of other source areas and continuation of the OMP will assess changes to PFAS concentrations in groundwater and surface water following remediation works.

What is an 'order of magnitude'?

This refers to something decreasing or increasing by multiples of ten. For instance, from 10 to 100 is a single order of magnitude increase. When assessing changes in PFAS concentrations at an individual location, all concentrations are considered when determining trends, but order of magnitude changes are discussed separately as they can represent significant changes in concentrations from what was reported in the previous event.

If a change is close to established health or environmental criteria, it will also be considered significant.

Groundwater results

Groundwater at the base flows radially outwards from the centre of the base and discharges into the four creeks surrounding the base. Rapid Creek to the north and Ludmilla Creek to the west receives the majority of groundwater from the base. Wet season in Darwin typically occurs from November to April, when almost all of the yearly rainfall occurs, with dry season occurring between May to October. Groundwater levels at the base fluctuate by ten metres during the wet season compared to the dry season. The measured groundwater level changes during the reporting period were consistent with previous years.

The results of groundwater sampling were consistent with previous years with no significant changes in the concentrations or extent of PFAS observed. The key findings of the groundwater sampling include:

- The highest concentrations of PFAS in groundwater continue to be associated with existing PFAS source areas including FFF4, FFF6, the former ARFF Fire Station and the CFTA. Remediation is planned for FFF4, FFF6 and the CFTA in 2024 and 2025, and further investigation of the former ARFF Fire Station to assess remediation options is also planned in 2024 and 2025.
- PFAS concentrations in groundwater at FFTA1 reported a significant decrease by one- to two-orders of magnitude. Remediation of this source area was completed in 2023, and this source area will continue to be monitored.
- The majority of PFAS concentrations outside the PFAS source areas were consistent with previous results.
- No monitoring wells reported any new exceedances of human health guidelines during the reporting period.

Groundwater results are discussed in more detail in Sections 7.1, 8.2 and 8.3 of this report, with sampling locations shown in Figure 2, Appendix A.

Surface water results

PFAS concentrations in surface water were consistent with previous data and within an order of magnitude of historical results.

PFAS concentrations were above the human health recreational water guideline at two locations in Rapid Creek and one location in Ludmilla Creek during the monitoring period. These locations have previously been above the recreational water guideline and are consistent with historic data.

All monitoring locations (with the exception one from a drain leading to Rapid Creek), reported at least one result above the freshwater ecosystems guideline value for perfluorooctane sulfonic acid (PFOS) during this reporting period. This was also consistent with previous results.

Surface water results are discussed in more detail in Sections 7.2, 8.4 and 8.5 of this report, with sampling locations shown in Figure 3, Appendix A.

Aquatic biota results

The majority of PFAS concentrations in aquatic biota collected from Ludmilla Creek and Rapid Creek were consistent with historical data. One crustacean sample (a freshwater prawn) collected from within Rapid Creek reported PFOS an order of magnitude above other crustacean results and above the human consumption guidelines. Despite this increase, PFAS concentrations in aquatic biota from Rapid Creek and Ludmilla Creek are consistent with previous results.

The potential risks to human health from eating fish or crustaceans have not changed to those presented in the Detailed Site Investigation (DSI) (Coffey, 2018a), Human Health Risk Assessment (HHRA) (Coffey, 2018c) and the PMAP (Defence, 2019). The health advisories issued by the Northern Territory (NT) Department of Health in 2019 recommending limiting eating fish or crustaceans from the freshwater section in Rapid Creek are still in place.

Aquatic biota results are discussed in more detail in Sections 7.3 and 8.6 of this report, with sampling locations shown in Figure 4, Appendix A.

Conclusions

The conclusions of the June 2023 to April 2024 monitoring program interpretive assessment are:

- Groundwater levels fluctuate by up to ten metres across the Management Area over the wet and dry seasons, with higher groundwater levels recorded in the late wet season following sustained rainfall.
- Groundwater flows away from the centre of the base towards the nearby creeks.
- The results indicate that the concentrations and extent of PFAS in groundwater, surface water and aquatic biota are consistent with previous findings.
- The majority of concentrations of PFAS in groundwater were stable or decreasing. While fluctuations were observed due to seasonal variability, this is consistent with previous findings.
- The highest PFAS concentrations in groundwater were reported at PFAS source areas. Three source areas, where the highest concentrations were reported, are planned for remediation in 2024/2025.
- PFAS impacted stockpiles at the Wrapped Stockpile Area were removed and remediation at FFTA1 was completed in 2023.
- The conceptual site model (CSM) was reviewed in light of the data in this OMR and no changes to the risk profile were identified.
- Ongoing sampling as part of the OMP will continue to monitor the concentrations and extent of PFAS in groundwater, surface water and biota, PFAS movement at and from the Base, and any changes in potential risks to human health or the environment.

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
AECOM	AECOM Australia Pty Ltd
AFFF	Aqueous film forming foam
AHD	Australian height datum
ARFF	Former Aviation Rescue Fire Fighting (fire station)
ASC NEPM	National Environment Protection (Assessment of Site contamination) Measure
BOM	Bureau of Meteorology
CFTA	Current (Hot) Fire Training Area
CSM	Conceptual site model
Defence	Department of Defence
DIA	Darwin International Airport
DO	Dissolved oxygen
DoH	Department of Health
DSI	Detailed Site Investigation
EPA	Environment Protection Authority
ERA	Ecological Risk Assessment
FFF1	Former Fuel Farm 1
FFF4	Former Fuel Farm 4
FFF5	Former Fuel Farm 5
FFF6	Former Fuel Farm 6
FFTA1	Former Fire Training Area 1
FFTA2	Former Fire Training Area 2
FSANZ	Food Standards Australia New Zealand
GME	Groundwater monitoring event
HEPA	Heads of EPA
HHRA	Human health risk assessment
LMU	Large mock-up
LOR	Limit of Reporting
m bgl	Metres below ground level
m BTOC	Metres below top of casing
m AHD	Metres above Australian Height Datum
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NEPC	National Environment Protection Council
NHMRC	National Health and Medical Research Council
NT	Northern Territory
NT Health	Northern Territory Department of Health
OLA	Ordnance loading area
OMP	Ongoing monitoring plan

Acronyms/Abbreviations	Definition
OMR	Ongoing Monitoring Report
PFAS	Per- and poly-fluoroalkyl substances
PFHxS	Perfluorohexane sulfonic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
PFOS+PFHxS	Sum of PFOS + PFHxS
PMAP	PFAS Management Area Plan
PVC	Polyvinyl Chloride
QA	Quality assurance
QC	Quality control
SHE	Standard hydrogen electrode
RAAF	Royal Australian Air Force
RAAF-FS	Former RAAF Fire Station
RAP	Remediation action plan
RPD	Relative percentage difference
SAQP	Sampling analysis and quality plan
SFARP	so-far-as-reasonably-practicable
SWL	Standing water Level
Tetra Tech Coffey	Tetra Tech Coffey Pty Ltd
TOC	Top of Casing

UNITS OF MEASUREMENT

Acronyms/Abbreviations	Definition
ha	hectares
kg	kilogram(s)
L	litre(s)
m	metre(s)
mg	milligram(s)
mg/kg	milligrams per kilogram
mg//L	milligrams per litre
mm	millimetres
µg	microgram(s)
µg/L	micrograms per litre
µg/kg	micrograms per kilogram

1. INTRODUCTION

Tetra Tech Coffey Pty Ltd (Tetra Tech Coffey) was engaged by the Department of Defence (Defence) to prepare this Ongoing Monitoring Report (OMR) for the Royal Australian Air Force (RAAF) Base Darwin (the Base), Northern Territory (NT).

This OMR summarises the results of groundwater, surface water and biota sampling undertaken by AECOM between June 2023 and April 2024 (the 'reporting period') as part of Defence's PFAS Management Area Plan (PMAP) and in accordance with the RAAF Base Darwin Ongoing Monitoring Plan (OMP) (Defence, 2019b). The OMR includes comparisons to previously collected data and provides interpretation of the results of the monitoring.

1.1 BACKGROUND

Defence undertook extensive investigations into PFAS at the base in 2018 which were documented within the RAAF Base Darwin Detailed Site Investigation (DSI) (Coffey, 2018a), Supplementary DSI (Coffey, 2018d), Human Health Risk Assessment (HHRA) (Coffey, 2018c) and Ecological Risk Assessment (ERA) (Coffey, 2018b) ('the investigation reports').

These investigations assessed the potential risks PFAS poses to human health and environment both on and around the base. The findings of the investigations led to the preparation of a PMAP, which summarised how Defence plan to manage and reduce PFAS moving off the base. The PMAP also included an OMP to monitor changes in PFAS movement as Defence undertook active management and remediation of PFAS.

The OMP details how groundwater, surface water and biota (fish and crustaceans) are to be sampled at and around the base. The monitoring program includes sampling during both the wet and dry seasons to measure how PFAS movement and/or concentrations change under different climate conditions.

1.2 PURPOSE AND OBJECTIVES

The objective of the ongoing monitoring program is to continue to assess changes in the concentrations and extent of PFAS within the environment, where Defence's historical use of legacy aqueous film forming foam (AFFF) has led to a potentially elevated risk to receptors, or potential future risk to receptors.

The objective of the OMR is to assess the changes in the extent, concentration and transport (pathways and flow rates) of PFAS and compare the results against human health and ecological guidelines and historical data to provide:

- An evidence base for targeted and effective risk management decision-making to protect human and environmental receptors.
- An early warning where additional management of PFAS contamination may be warranted in areas not currently understood to be affected by PFAS.

1.3 SCOPE OF OMR

The scope of works for this OMR included assessing changes to the extent of PFAS in groundwater, surface water and aquatic biota during the reporting period (June 2023 – April 2024) compared to historical data and assessing potential changes to the conceptual site model (CSM) and risk profile at the base using data collected by AECOM.

The following sampling events were included as part of this OMR:

- Groundwater monitoring completed in October 2023 and March 2024.
- Biota monitoring completed in October 2023.
- Surface water sampling completed in December 2023 and March 2024.
- Surface water sampling completed in August 2023, January 2024, February 2024 and April 2024 at key locations in addition to the main December 2023 and March 2023 events.

Data was evaluated from the following OMP factual reports (which are included in Appendix B):

- Dry Season Sampling Event Factual Report 2023, PFAS OMP – RAAF Base Darwin, 29 January 2024 (AECOM, 2024a)
- Wet Season Sampling Event Factual Report, 2024, PFAS OMP – RAAF Base Darwin, 3 July 2024 (AECOM, 2024b)

In addition to the above reports, the following previous reports (and associated data) were also assessed as part of this OMR:

- Interpretive Report 2020, PFAS OMP – RAAF Base Darwin, 28 January 2021 (AECOM, 2021)
- Ongoing Monitoring Interpretive Report (November 2020 – June 2023), PFAS OMP – RAAF Base Darwin, 25 August 2023 (AECOM, 2023a)
- RAAF Base Darwin, Detailed Site Investigation – Per- and Poly-fluoroalkyl Substances (PFAS), 5 February 2018 (Coffey, 2018a)
- RAAF Base Darwin, Supplementary Detailed Site Investigation Report Per- and Poly-fluoroalkyl Substances (PFAS), 2 November 2018 (Coffey, 2018d)
- RAAF Base Darwin, PFAS Human Health Risk Assessment (Coffey, 2018c)
- PFAS Management Area Plan – RAAF Base Darwin (Defence, 2019a)

2. BASE SETTING

2.1 ENVIRONMENTAL SETTING

The base identification and setting are summarised in Table 2-1 below. The base location and surrounds (including the PFAS Management Area) are shown in Figure 1, Appendix A.

Table 2-1: Environmental Setting

Element	Description
Base Name	RAAF Base Darwin
Base ID	1302
Address	Stuart Highway Winnellie, Northern Territory
Approximate Base Area	1,278 hectares
Title Identification	Commonwealth freehold title, comprising Sections 5060 and 3437 (Hundred of Bagot)
Current Land Use Zoning	Commonwealth Land
Regional meteorology	Darwin has a tropical climate with distinct monsoonal wet and dry seasons. Most of the rainfall occurs from November to April (wet season), although isolated rainfall events also occur at the beginning and end of the dry season. Evaporation is relatively constant with peaks during the wet season build-up. Maximum temperatures also occur during the wet season build-up, and minimum temperatures are reached in July. Average annual rainfall is 1,727 mm (measured at Darwin Airport Bureau of Meteorology (BOM) Station 014015) (www.bom.gov.au, August 2024).
Topography	The base is relatively flat, compared to surrounding land which is gently undulating in nature. It is gently sloping at a height of 10 to 33 m Australian height datum (m AHD) across several kilometres and slopes down along the northern and western boundaries. A topographic high runs approximately in line with the main runway and then to the north, parallel to Rapid Creek.
Geology	The geology underlying the base comprises the following: • Unconsolidated sands, clayey sands and ferruginous clayey sands and soil. This layer is often described as lateritic or ferricrete and may appear to be gravels. This layer thickness is one to two metres thick but can range up to 10 m thick. • Bathurst Island Formation consisting of siltstone, claystone, sandy claystone, clayey sandstone, quartz sandstone, ferruginous sandstone, glauconitic sandstone and conglomerates towards the base of the unit. The unit ranges between 17 and 27 m thick on the base. • Burrell Creek Formation consisting of siltstone, shale, sandstone, and quartz pebble conglomerate. The top of this unit was encountered at depths of 35 metres below ground level (m bgl).
Hydrogeology	There are two aquifer systems underlying and in the vicinity of the Base: • The unconfined water table aquifer consists of both the upper lateritic sediments and the Bathurst Formation. The two lithologies act as a single aquifer, and no significant confining layer is present. Groundwater levels in the upper aquifer may rise to ground level during the wet season due to recharge from surface water infiltration. In the wet season, groundwater is likely to flow through both units, however once groundwater levels drop in the dry season, groundwater flow is predominantly in the Bathurst Formation (siltstone). • The Burrell Creek Formation aquifer underlies the Bathurst Formation aquifer, and is a confined aquifer comprising siltstone, shale, and sandstone and quartz pebble conglomerate.
Groundwater depth and flow	Standing water levels in the upper unconfined aquifer are subject to significant seasonal variation and appear to change by more than ten metres between wet and dry seasons on the northern portion of the Base, by approximately five metres in the southern portion of the Base, and by less

Element	Description
	than one metre adjacent to Rapid Creek (northwest of the Base), and in the southwestern corner of the base. The groundwater flow direction in the upper unconfined aquifer follows surface topography with groundwater flowing: • to the north (towards Rapid Creek) from the southern side of the main runway • to the south (towards Sadgroves and Reichardt Creeks) in the south of the Base, and • to the west and southwest (towards Ludmilla Creek) in the southwest of the base.
Base drainage	The base is drained by large, open, unlined drains, municipal drains and underground piping that discharge surface waters into: • Rapid Creek on the north and east sides of the base via Marrara Swamp. Rapid Creek is a freshwater stream that is fed by groundwater during the dry season and flows to the northwest prior to discharging to Beagle Gulf. The lower portion of Rapid Creek becomes estuarine prior to discharging to the marine environment at the mouth. • Sadgroves Creek on the south. Sadgroves Creek is an estuarine creek and tidally influenced. • Ludmilla Creek on the west. Ludmilla Creek is mixture of freshwater, estuarine and marine and flows to the west prior to discharging to Beagle Gulf. • A small central portion of the base on the southern boundary discharges to Reichardt Creek.
Current and previous land use	The base was constructed in 1940 as an operational military airfield. The base is now a joint civil-military airstrip with Darwin International Airport (DIA) north of the main runway. The base is bounded by McMillans Road to the north, Amy Johnson Avenue to the east, Stuart Highway to the south and Bagot Road to the west. Current surrounding land uses include: • North: DIA, Marrara Swamp and vegetation corridor. The residential suburbs Marrara, Milner, Malak and Moil are located beyond DIA. • East: Nurseries, small farms, residential areas and industrial/commercial zones. • South: Industrial suburb of Winnellie and Darwin Showgrounds. The residential suburb of The Narrows is located southeast of the base. • West: Residential suburbs of Bagot and Ludmilla and the industrial portion of Coconut Grove.

2.2 SOURCE AREAS

PFAS source areas were identified across the base associated with historical storage, usage, handling and distribution of legacy AFFF containing PFAS as a part of the DSI (Coffey, 2018a). The primary source areas, as outlined in the PMAP (Defence, 2019a) are shown on Figure 1, Appendix A and include:

- Former Fire Training Area 1 (FFTA1) (Note: This area has also previously been called the Former Fire Training Ground 1)
- Former Fuel Farm 5 (FFF5)
- Former Fuel Farm 4 (FFF4)
- Former Fuel Farm 6 (FFF6)
- Wrapped Stockpile Area (Note: This area has also previously been called the ‘AFFF Contaminated Soil Stockpiles’)
- Former Aviation Rescue Fire Fighting (ARFF) fire station
- Hangar 31
- Former Fuel Farm 1 (FFF1)
- Former RAAF Fire Station (RAAF-FS)
- Current (Hot) Fire Training Area (CFTA)
- Former Fire Training Area 2 (FFTA2)

2.3 PFAS MANAGEMENT AREA

The Management Area covers the base (groundwater and surface water) and discrete areas off-Base, specifically groundwater beneath part of Ludmilla and under DIA, and surface water systems of Rapid Creek, Ludmilla Creek, Sadgroves Creek and Reichardt Creek. The location of the base and Management Area is shown in Figure 1, Appendix A.

2.4 REMEDIATION PROJECTS

The PMAP includes various management actions to address PFAS risks that include direct remediation of PFAS source areas. The aim of remediation projects is to reduce PFAS leaving the Base, by focusing on the remediation and management of source areas. Over time we should see a reduction in PFAS leaving the base through surface water and groundwater.. The PMAP (Defence, 2019a) sets out the management measures to address soil and water PFAS contamination to reduce risks to receptors.

At the Base, PFAS was found to be primarily moving through surface water, whilst groundwater discharge to Rapid Creek also contributes to some of the PFAS migration off-base. Given that complete prevention of off-base migration is unlikely to be achievable, Defence aims to remediate PFAS impacts and off-base migration so-far-as-reasonably-practicable (SFARP).

2.4.1 Remediation completed during reporting period

Remediation projects that were undertaken and/or completed during the reporting period included:

- **Remediation of FFTA1 and the Wrapped Stockpile Area**

  The FFTA1 and Wrapped Stockpile Area remediation works commenced in June 2022 and were completed in November 2023 (Tetra Tech Coffey, 2024a). As part of the remediation, approximately 280 m^3 of PFAS contaminated soils removed from base for thermal destruction, and approximately 3,500 m^3 of PFAS impacted soils treated and reinstated into the area. The treated soils were capped with a 300 mm thick clay cap and finished with either a gravel hardstand (western portion) or topsoil and grass (eastern portion).

  The remediation treated or removed approximately 16 kg of PFAS from soils within the FFTA1 source area. Soils from the Wrapped Stockpile Area, which contained PFAS impacted soils removed from around Hangar 31 in 2008, were also treated and placed into the FFTA1 excavation. Approximately 5.3 kg of PFAS in the Wrapped Stockpile Area were treated.

- **Interim PFAS management measures at CFTA**

  Interim PFAS management measures at CFTA included the removal of the large mock-up (LMU) fire training apparatus and covering of the concrete fire-training pad to reduce PFAS leaching from the concrete pad and discharging to the environment.

- **Treatment of PFAS-impacted water**

  An AFFF deluge event at an aircraft hangar on the base with Class B foam resulted in the generation of PFAS impacted water. This water was treated on the base using a portable water treatment facility to remove PFAS prior to discharge of the treated water.

2.4.2 Scheduled remediation project

Remediation projects that are scheduled to commence at the base include:

- **Implementation of Balance of Base Remediation Action Plan (RAP)**

  Implementation of the Balance of Base RAP (Tetra Tech Coffey, 2023) is scheduled to commence in dry season 2024. These works will target the following source areas:

  - CFTA
  - FFF4
  - FFF6

  Additional soil, concrete and groundwater investigations were undertaken at the CFTA and former ARFF Fire Station in 2023 and 2024 to inform the RAP and remediation works. Further soil and groundwater investigations are planned at the former ARFF Fire Station in 2024 and 2025 to assist with remediation planning for this source area.

- **FFTA2 Remediation**

  Liaison is continuing with DIA regarding remediation planning for FFTA2, which is located on DIA-occupied land. Further soil investigations are being undertaken in 2024 to inform RAP development with remediation to be scheduled in the future. RAP development for this source area is scheduled for late 2024.

2.5 INFRASTRUCTURE PROJECTS

Development works at the base have included several infrastructure projects over the reporting period that may have resulted in the disturbance and stockpiling of soil, including (but not limited to):

- P0009 Runway works
- RAAF Base Darwin Stormwater works
- Solar Farm Works
- Tin City 6 works
- J105 Health centre (new build)

Each project is responsible for how they manage PFAS impacted soil and/or groundwater under their approved Environmental Clearance Certificates. However, due to the movement of soil as a result of these projects, potential exists for some mobilisation of PFAS.

Following discussions with base staff, we understand that minor PFAS contamination was detected in small areas of the runway surface asphalt removed during the runway works project. We understand that the impacted asphalt is currently stockpiled and awaiting off-base disposal. The location of Tin City 6 is near the former RAAF Fire Station across Bukatilla Road. However, PFAS impacts in soils in the area of the development was negligible.

Tetra Tech Coffey is not aware of any other practices or recent incidents which are likely to have resulted in changes to the nature or extent of PFAS at the base.

3. SAMPLING AND ANALYTICAL SCOPE AND METHODOLOGY

AECOM prepared a sampling analysis and quality plan (SAQP) (AECOM, 2023b) that included the details for how the sampling required by the OMP (Defence, 2019b) was to be undertaken. The SAQP (included in Appendix B) provides the details of the sampling locations and media, sampling schedule, justification of sampling approaches, sampling methodologies, analytical schedule and the approach to ensuring quality assurance (QA) and quality control (QC) requirements were achieved.

3.1 ONGOING MONITORING SCOPE

A summary of the monitoring events undertaken under the SAQP (AECOM, 2023b), and monitoring completed during the reporting period is provided in Table 3-1 below. The detailed summary of sampling locations is included in Appendix C of the SAQP (AECOM, 2023b) (provided in Appendix B of this report).

Table 3-1: Scope of work as per SAQP

Sample Matrix	Number of sample locations	Frequency	Monitoring events per year	Approximate monitoring period
Groundwater (on- and off-Base)	34	Biannual	2	End of dry season (October – December) and end of wet season (March)
Surface water (off-Base)	14	Twice in wet season	2	Start of wet season (as soon as practicable after first flush rain event, nominally December / January) and end of wet season (March)
Surface water (off-Base)	1	Monthly in wet season	5	Monthly between December – April
Surface water (off-Base)	1	Monthly in wet season and twice during dry season	7	Monthly between December – April, and June and August
Surface water (on-Base)	2 [1]	Monthly in wet season	5	Monthly between December – April
Surface water (on-Base)	6 [2]	Twice in wet season	2	Start of wet season (as soon as practicable after first flush rain event, following a great than 100 mm rain event, nominally December / January) and end of wet season (March)
Aquatic biota (off-Base)	6	Annually	1	End dry season or start wet season (October – December)

Notes:

1. Table 1, Section 1.3 of the SAQP (AECOM, 2023b), and Table 3, Section 2.1 of the Wet Season Sampling Event Factual Report, 2024 (AECOM, 2024b) both state the number of locations to be sampled monthly in the wet season is listed as 2. In contrast Table 2, Appendix C of the SAQP lists three locations (SW152, SW170, SW312) to be sampled monthly. It is assumed the requirement to sample SW152 monthly is an error in Appendix C, and this is only required to be sampled twice in wet season.
2. Table 1, Section 1.3 of the SAQP (AECOM, 2023b), note 7 on-base locations are to be sampled twice in wet season. However, Appendix C of the SAQP and Table 3, Section 2.1 of the Wet Season Sampling Event Factual Report, 2024 (AECOM, 2024b) both list only 6 locations to be sampled twice in the wet season. It is assumed Table 1 of the SAQP has seven listed in error, and only six locations are required to be sampled twice in wet season.

3.2 SUMMARY OF COMPLETED MONITORING JUNE 2023 – APRIL 2024

A summary of the monitoring completed in the reporting period is provided in Table 3-2 below. The groundwater, surface water and biota sampling locations are shown in Figure 2, Figure 3 and Figure 4, Appendix A, respectively.

Table 3-2: Summary of monitoring completed

Monitoring Events	Sampling dates	Number of samples required in SAQP	Number of samples collected
Biannual groundwater sampling – end of dry season and end of wet season	October and November 2023	34	28
	March 2024	34	34
Surface water off-base – twice in wet season	December 2023	14	14
	March 2024	14	14
Surface water off-base – monthly in wet season	December 2023	1	1
	January 2024	1	1
	February 2024	1	1
	March 2024	1	1
	April 2024	1	0
Surface water off-base – monthly in wet season and twice during the dry season	June 2023	1	0
	August 2023	1	1
	December 2023	1	1
	January 2024	1	1
	February 2024	1	1
	March 2024	1	1
	April 2024	1	1
Surface water on-base – monthly in wet season	December 2023	2	2
	January 2024	2	2
	February 2024	2	2
	March 2024	2	2
	April 2024	2	1
Surface water on-base – twice in wet season	December 2023	6	6
	March 2024	6	5
Aquatic biota – end dry season or start wet season (off-base)	October 2023	6	6

3.3 DEVIATIONS FROM THE SAQP

Deviations from the scope outlined in the SAQP (AECOM, 2023b) for the reporting period are summarised in Table 3-3 below.

Table 3-3: Summary of SAQP deviations

SAQP requirement	Deviation	Impact of deviation on data set
Surface water dry season sampling event (June 2023)		
Sampling of SW109 twice in dry season.	SW109 was not sampled in June 2023 as the sampling event was missed in error.	***Minor impact*** – data gap for June 2023 PFAS concentrations going off-base to Rapid Creek. It is noted that SW109 was sampled in the second dry season event (August 2023) and historical data is available for June in previous years.
Biannual groundwater sampling – end of dry season sampling event (October 2023)		
Sampling of 34 biannual groundwater locations at the end of dry season.	MW112 was not sampled due to runway upgrades. This location is suspected to be beneath earth works or destroyed during the upgrades.	***Minor impact*** – The lack of data in the monitoring event is considered to only have a minor impact on the understanding of concentration changes within the source area. These monitoring wells have previously been sampled in the dry season and there are other monitoring locations hydraulically down gradient of these locations (MW156 for MW112, MW454 for MW235) that were sampled as part of this sampling event. Whilst wells MW189 and MW191 are downgradient of FFTA2 well MW197, they do not provide relevant data associated with changes in the concentrations of PFAS within the source area. However, it is recognised that groundwater is rarely present in well MW197 during the dry season, and the majority of PFAS flux from this source area occurs during the wet season.
	MW235 (an alternative well for MW422 which was removed during the remediation works) was not sampled due to bent well casing, only gauging results were able to be recorded as no HydraSleeve™ was able to be deployed.	
	Both MW197 and the alternative monitoring location – MW236 – were dry and unable to be sampled.	
	MW240, MW241 and MW453 were both dry and unable to be sampled. No alternative locations are provided in the SAQP.	***Minor impact*** – It is recognised that groundwater is rarely present in wells MW240, MW241 and MW435 during the dry season, and the majority of PFAS flux from this source area occurs during the wet season. The lack of data in the monitoring event is considered to only have a minor impact on the understanding of concentration changes within the source area.
	MW128 was gauged and sampled at a later date (November 2023) due to a delay in obtaining gate keys from base Management.	***No impact*** – The sampling of MW128 in early November (9 November 2023) instead of October 2023 with the other monitoring locations is not considered to have an impact on the data as the wet season had not yet commenced with only one minor rain event (6 November 2023, 13.6 mm of rain)[1] prior to this sampling event. Therefore, groundwater conditions are still considered to reflect dry season conditions.
	MW422 was decommissioned prior to the sampling event as part of the FFTA1 remediation works.	***Minor impact*** – The lack of data in this well is considered to have a minor impact on the understanding of concentration changes in the source area as monitoring well MW502 was installed following the completion of the FFTA1 remediation within approximately two metres of the former location of MW422, and data from MW502 has been included in this OMR.
Water quality parameters – groundwater.	The water quality parameter data at MW205 for dissolved oxygen (DO) was lost due to an electronic data collection	***Minor impact*** – The lack of DO parameters for this well is considered to have minimal impact on the data set as DO does not influence the behaviour of PFAS in groundwater.

SAQP requirement	Deviation	Impact of deviation on data set
	fault where saved data was unable to be retrieved.	
	The water quality parameter data for MW128 was lost due to an electronic data collection fault where saved data was unable to be retrieved.	***Minor impact*** – The lack of water quality parameters for this well is considered to have minimal impact on the data set, as the interpretation of PFAS data from this well does not rely on water quality parameters.
Aquatic biota – end of dry season / start of wet season sampling event (November 2023)		
QA/QC for biota sampling.	A field blank as not collected during the biota sampling event.	***Minor impact*** – The accuracy of the data can be considered acceptable based on the available rinsate and trip blank samples that were reported at the required frequencies and within control limits as a part of the biota sampling (refer Section 4).
Monthly wet season surface water sampling events (December 2023 – April 2024)		
Three of four surface water locations to have flow readings and depth of water recorded. SW109 to have flow measurements recorded by a nearby stream gauge.	During the December 2023 sampling event, samples were collected at all four locations however flow readings and depth and width of water were not recorded.	***Notable impact*** – While concentration data from this sampling event will be useful for understanding PFAS impacts at the time of sample collection, the lack of flow and calculated volume data will limit the verification of flow volumes in evaluating PFAS mass flux calculations for Rapid Creek during this period.
Four surface water locations are to be sampled monthly.	During the April 2024 sampling event, samples were not collected from two of the nominated locations (SW312 and SW300) as they were dry.	***No impact*** – Only a total of 18.4 mm of rain was recorded at DIA in April 2024[1]. As PFAS mass flux in surface water only occurs during active flow events, PFAS mass flux calculations were not impacted as the lack of water demonstrated zero flux.
Water quality parameters are to be recorded for all surface water samples.	DO readings at SW170 were unable to be recorded due to water quality meter failure.	***Minor impact*** – Most of the DO readings from other locations were consistent with base conditions.
Biannual groundwater sampling – end of wet season sampling event (March 2024)		
Sampling of 34 biannual groundwater locations at the end of wet season.	MW112 was not sampled due to runway upgrades. This location is suspected to be beneath earth works or destroyed during the upgrades.	***Minor impact –*** As all other groundwater samples were collected from down-gradient locations, the lack of data for MW112 is only considered to have a minor impact on PFAS mobilisation and transport in the wet season.
	MW422 was decommissioned prior to the sampling event. Monitoring well MW502 was sampled in error as this was incorrectly believed by the sampling team to be the decommissioned MW422.	***No impact*** – MW502 is considered a replacement well for MW422. MW422 was decommissioned as part of the FFTA1 remediation works and MW502 was installed within the FFTA1 excavation footprint, as a replacement for MW422 and as such is considered an alternate well to meet the objectives of assessing PFAS mass flux within FFTA1 source area.
One rinsate blank sample to be collected per sampling day.	Only one rinsate blank sample was collected instead of two.	***Minor impact –*** AECOM (AECOM, 2024b) confirm all sampling equipment was either dedicated, disposal or decontaminated with a solution of water and Liquinox between sampling locations. The decontamination methods and field staff were consistent over the

SAQP requirement	Deviation	Impact of deviation on data set
		course of the sampling event. All reported groundwater sampling results were within expected concentration ranges.
One field blank per sampling day.	Only one field blank was collected instead of two.	***Minor impact*** – Field staff were consistent over the course of the sampling event and sampling and sample handling procedures remained consistent. Furthermore, field blanks have been below the laboratory limit of reporting (LOR) throughout the entire ongoing monitoring program (December 2019 to April 2024).
Twice in wet season surface water sampling events (December 2023 and March 2024)		
Biannual sampling of SW101.	Alternate sampling location (SW152) was sampled as SW101 has been made inaccessible through the installation of a security fence surrounding the airfield areas of RAAF Base Darwin.	***Minor impact*** – Due to the inaccessibility of SW101, the closest accessible point to collect surface water samples from upper Rapid Creek down gradient of the runway is SW152. This sample has been used as an alternative to SW101 since after April 2021. SW152 is located approximately 350 m south of SW101.
Water quality parameters are to be recorded for all surface water samples.	Water quality parameters failed to save during the December 2023 sampling event and as such data was lost for the following locations: • SW112 • SW113 • SW120 • SW109	***Minor impact –*** A minor data gap in water quality parameters exists for the December 2023 sampling event. This is considered to only have a minor impact on the results as the analytical results were consistent with historical data, and water quality data does exist for historical December sampling events. It is noted the water quality parameters and observations were accurately saved during the March 2024 sampling event.
24 surface water sampling locations were to be collected twice in the wet season.	Surface water location SW156 was dry during the March 2024 sampling event and therefore unable to be sampled.	***Minor impact*** – Downgradient sample location SW109 recorded PFAS concentrations within the expected range during the March 2024 sampling event, indicating it is unlikely that up-gradient locations, such as SW156, would be contributing higher than expected PFAS concentrations in the localised drainage system.

Notes:

1. Darwin weather station 014015, www.bom.gov.au, accessed 29/07/2024

3.4 CHANGES TO THE MONITORING NETWORK

Tetra Tech Coffey decommissioned monitoring well MW422 on 31 May 2022 as part of pre-remediation works at the FFTA1 source area. Once the remediation was complete at FFTA1, a replacement well MW502 was installed in the vicinity (within 2 m) of the former MW422 on 8 November 2023. This groundwater well is considered a replacement well for MW422 for the purpose of the ongoing monitoring program.

The locations of both former MW422 and replacement well MW502 are shown in Figure 2, Appendix A.

4. QUALITY ASSURANCE AND QUALITY CONTROL

AECOM implemented a QA/QC program as part of their field sampling procedures, based on relevant Australian Standards, Heads of Environment Protection Authority (HEPA) 2020 PFAS National Environmental Management Plan Version 2.0 (HEPA, 2020), (herein referred to as the PFAS NEMP) and industry practice. The implemented QA/QC program included the following:

- The use of appropriately qualified/trained environmental scientists to conduct the assessment.
- The use of standardised field records to document the findings of the assessment.
- Appropriate preservation of samples during transport from the field to the laboratory.
- The use of chain of custody documentation to ensure the traceability of sample transport and handling.
- The use of laboratories accredited by the National Association of Testing Authorities Australia (NATA) for the analysis of samples.
- The collection and analysis of field QC samples.
- Review of internal analysis of laboratory QC samples.
- The use of appropriate laboratory reporting limits.
- Compliance with sample holding times.
- Comparison of field and analytical data to check for the occurrence of apparently unusual or anomalous results.

A review of the QA/QC sampling measures implemented as a part of the sampling program has been undertaken to evaluate the precision and accuracy of the results and to assess whether the results can be relied on in drawing conclusions about the nature and extent of PFAS impacts in the Management Area.

AECOM undertook a review to validate the QA/QC results for each sampling event which included within the following factual reports provided in Appendix B:

- AECOM, Dry Season Sampling Event Factual Report 2023 (AECOM, 2024a)
- AECOM, Wet Season Sampling Event Factual Report, 2024 (AECOM, 2024b)

Tetra Tech Coffey has undertaken a review of the QA/QC results undertaken by AECOM as detailed below.

The steps in the sampling and analysis process are subject to natural and inherent variability, and this can affect the results produced, and the overall quality of the data sets generated. In order to minimise the effect of this, standard procedures are used for works carried out in the field, and in the laboratory. The use of such procedures represents one aspect of the quality assurance process. To measure the effectiveness of the QA process, QC samples can be tested, and other QC tests can be conducted during the analysis of samples taken in the field.

4.1 QUALITY ASSURANCE

Tetra Tech Coffey reviewed the quality assurance measures deployed by AECOM during the sampling events in this reporting period. A summary of the quality assurance measures, and outcomes of the review, is provided in Table 4-1 below.

Table 4-1: QA measures reviewed

Item	Detail	Yes	No	Comment
Sampling methodologies	Samples to be collected, and decontamination / avoidance of cross-contamination	☐	☒	Minor deviations to SAQP occurred, however these are not considered to have affected the integrity of the data

Item	Detail	Yes	No	Comment
	measures to be employed in accordance with approved SAQP (AECOM, 2023b).			collected. Further details on deviations are provided in Section 3.3.
Sample handling	All samples to be given a unique identified and labelled with relevant project details. All samples were placed in chilled, insulated coolers.	☒	☐	Some samples received at the laboratories exceeded the recommended temperature range of ≤ 6°C (up to 27.0°C). As key PFAS compounds analysed are not volatile, the samples were received below ambient water temperatures (~30°C) and samples were cooled immediately upon collection, this is not considered to affect the interpretation of results.
Frequency of QC samples	QC samples collected at a rate of 1 in 10 primary samples in accordance with PFAS NEMP.	☒	☐	
Rinsate samples	Rinsate samples to be prepared in the field using empty bottles and PFAS-free de-ionised water used for cleaning of non-disposable sampling equipment. Rinsate samples to be collected at a minimum rate,	☐	☒	One rinsate sample was not collected on 4 March 2024. The integrity of the data is not considered to have been compromised given the decontamination methods and field staff were consistent over the course of the sampling event. All reported groundwater sampling results collected on 4 March 2024 were within expected concentration ranges.

4.2 QUALITY CONTROL

QC samples and tests can be used to assess both the accuracy, and the precision of the results produced.

Measures of accuracy provide information on how close to the true result is the reported result. For practical reasons, measures of accuracy are usually confined to the laboratory steps in the overall process.

Measures of precision provide information on the variability in the results. Precision can be assessed as:

- “repeatability” or intra-laboratory variation – the degree of variation in a result when the same laboratory analyses a sample (or blind replicate) several times, and
- “reproducibility” or inter-laboratory variation – the degree of variation in a result when a different laboratory separately analyses a sample.

In addition, blank samples can be used to assess whether extraneous materials and factors have contributed to the results obtained from the sampling and analysis process.

4.2.1 Field quality control

Precision of the sample collection, transport and analysis process is measured by the relative percent difference (RPD) between duplicate results. Acceptance targets for duplicates are dependent on matrix type, contaminant type and contaminant concentrations. RPDs are considered acceptable where RPDs are less than 30% unless:

- Results are less than 10 times LOR – in which instance there is no limit, or
- Results less than 20 times the LOR have an RPD of less than 50%.

Results in this reporting period reported elevated RPDs above the acceptable control limits for perfluorooctane sulfonic acid (PFOS) for the following primary samples collected:

- **Dry Season Factual Report 2023**
  - MW144, RPD – 58% (inter-laboratory duplicate)
  - MW185, RPD – 77% (inter-laboratory duplicate)
  - SW109, August 2023, RPD – 70% (inter-laboratory duplicate)
- **Wet Season Factual Report, 2024**
  - MW144, RPD – 35% (inter-laboratory duplicate)
  - MW303, RPD – 38% (inter-laboratory duplicate)
  - MW156, RPD – 86% (inter-laboratory duplicate) (and PFHxS – 73%)
  - SW114, March 2024, RPD – 65% (inter-laboratory duplicate)

The review of the results of the QC replicate sampling indicated a good correlation between the intra-laboratory duplicate results (samples analysed at the primary laboratory), with some discrepancies noted for the inter-laboratory duplicate results (samples analysed at the secondary laboratory). Where RPD results were above the adopted screening criteria, they were assessed further. The results for the discrepancies indicated that the primary laboratory reported higher concentrations of PFOS (and other PFAS compounds) than the secondary laboratory, indicating the results from the primary laboratory are a conservative measure of the concentrations of PFAS in the sampled media.

Rinsate blanks, trip blanks and field blanks were collected as a part of the AECOM sampling program and analysed for PFAS. All results were below the laboratory reporting limits and indicate that the potential for cross-contamination between sampling locations, during sampling or during sample transport was low and acceptable.

The results from the Quality Control sampling were considered to indicate that the dataset could be relied on to assess risks to receptors and changes in concentrations as a part of this report.

4.2.2 Laboratory quality control

Laboratories are accredited by the NATA on the basis of their ability to provide quantitative evidence of their ability and competence to produce reliable results against recognised benchmarks NATA accredited laboratories are able to demonstrate the ability to produce reliable, repeatable results for a range of parameters within a range of sample matrices. Each laboratory method used undergoes a validation process before it is adopted by the laboratory and accredited by NATA. As part of the validation process, the precision and accuracy of the method are established.

In addition, laboratories conduct their own QC testing to indicate their performance on each reported batch of samples. The results of this testing are compared with the validated precision and accuracy.

Whilst there were some non-conformances, as detailed in the individual factual reports provided in Appendix B, the non-conformances have been reviewed and are not considered to impact on the integrity of the overall data collected during this reporting period.

4.3 SUMMARY

The QA/QC review process undertaken for this OMR included:

- Data integrity check – verifying the data is complete, accurate and consistent with established standards and procedures.
- Methodology review – ensuring the correct sampling and analytical methods were used.

- Validation of results – comparing the results with QA/QC criteria (such as RPDs and laboratory control limits) to confirm the data is within acceptable ranges.
- Identification of anomalies – checking for any errors or inconsistencies in the data and investigating causes.
- Documentation – ensuring all QA/QC procedures and findings are documented.

Following the review, Tetra Tech Coffey considers the data obtained during this reporting period, along with the historical data assessed, to be reliable, i.e., represent actual PFAS concentrations and site conditions at the time of monitoring and therefore be suitable for the understanding assessment of risk within the Management Area.

5. ASSESSMENT CRITERIA

Screening criteria used to assess the potential risks to receptors as a part of the monitoring program were sourced from the (HEPA, 2020)PFAS NEMP. The screening criteria in the PFAS NEMP were developed based on guidance provided in the following:

- Department of Health (DoH). Health Based Guidance Values for PFAS for use in site investigations in Australia. April 2017 (DoH, 2017a)
- DoH. Perfluorinated Chemicals in Food – Consolidated Report, April 2017 (DoH, 2017b)
- National Health and Medical Research Council (NHMRC), 2019. Guidance on PFAS in Recreational Water. August 2019 (NHMRC, 2019)
- National Environment Protection (Assessment of Site contamination) Measure 1999 (ASC NEPM), Schedule B1, as amended ion 2013 (NEPC, 2013).

Adopted PFAS screening values for groundwater, surface water and aquatic biota are provided in Table 5-1 below.

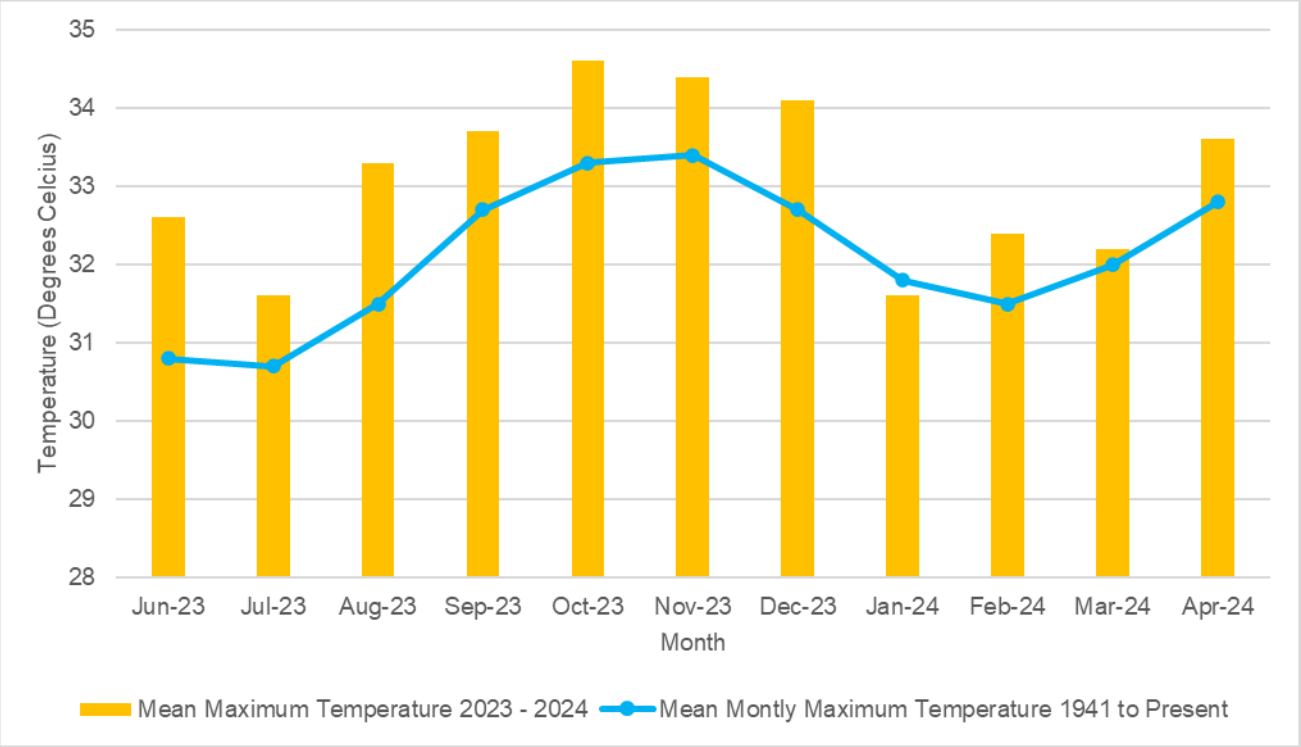
Table 5-1: PFAS screening criteria

Media		Compound	Criteria	Comment / Reference
Groundwater and surface water	Freshwater	PFOS	0.00023 µg/L	HEPA (2020) NEMP 99% species protection.
		Perfluorooctanoic acid (PFOA)	19 µg/L	
Groundwater	Drinking water	PFOS+ Perfluorohexane sulfonic acid (PFHxS) [1,2]	0.07 µg/L	The values presented in the HEPA (2020) are from DoH 2017a. DoH utilised the tolerable daily intake for PFOS and PFOA from Food Standards Australia New Zealand (FSANZ), 2017 and the methodology described in Chapter 6.3.3 of NHMRC Australian Drinking Water Guidelines, 2016 to establish drinking water values.
		PFOA	0.56 µg/L	
Surface water	Recreational use	PFOS+PFHxS[1]	2 µg/L	The values presented in HEPA (2020) were based on NHMRC guidance on the assessment of PFAS in surface water. The NHMRC adjusted the ingestion rate with consideration of an event frequency (150 events / year) to calculate an annual ingestion rate of 30 L per year.
		PFOA	10 µg/L	
Aquatic biota	Crustaceans	PFOS and PFOS+PFHxS	65 µg/kg	The values are presented in (DoH, 2017b) derived for the projection of children 2 to 6 years old, medium consumption.
		PFOA	520 µg/kg	
	Finfish	PFOS and PFOS+PFHxS	5.2 µg/kg	The values are presented in (DoH, 2017b) derived for the projection of children 2 to 6 years old, P90 consumption.
		PFOA	41 µg/kg	

Notes:
1. HEPA (2020) notes where the criteria refer to the PFOS+PFHxS, this includes PFOS only, PFHxS only, and the sum of the two
2. PFOS+PFHxS relates to the sum of PFOS and PFHxS

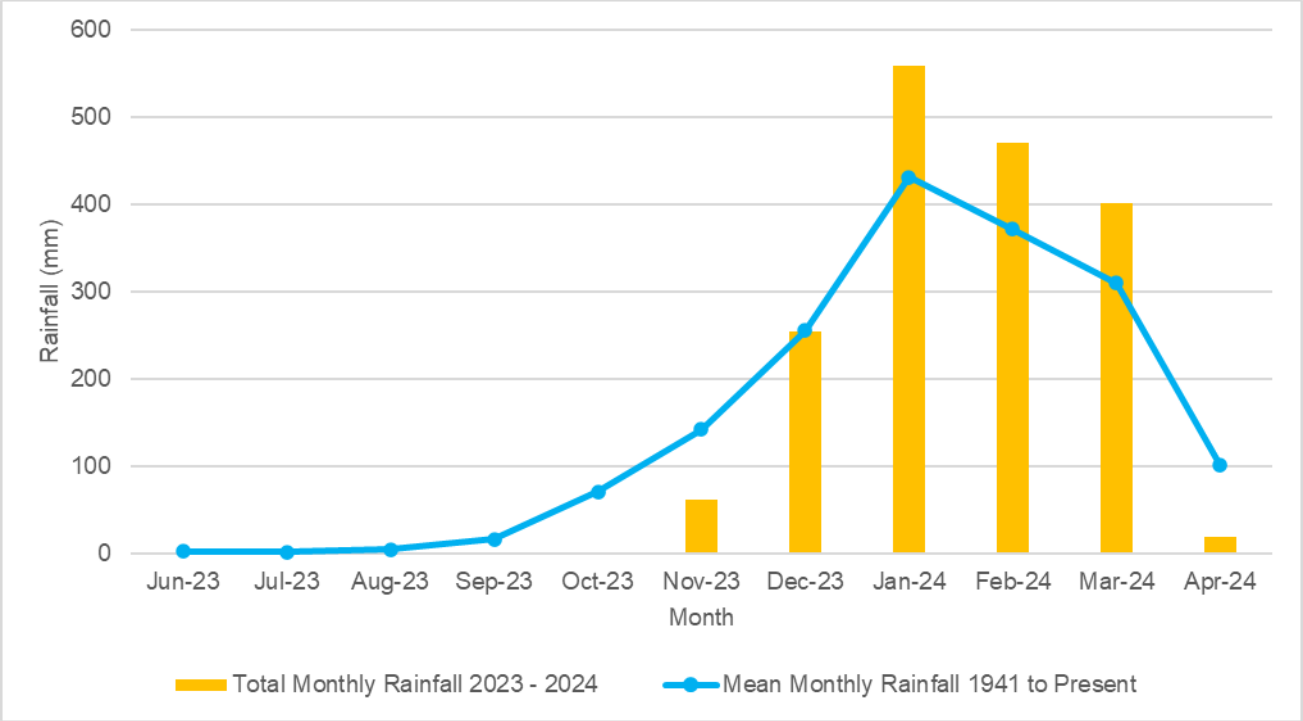
6. CLIMATE

The reporting period between June 2023 and April 2024 was characterised by above average temperatures in all months, except for January 2024 which reported an average temperature slightly (0.2 °C) below the long-term average. A graph of monthly reported maximum temperatures alongside the long-term average is shown in Graph 6-1.

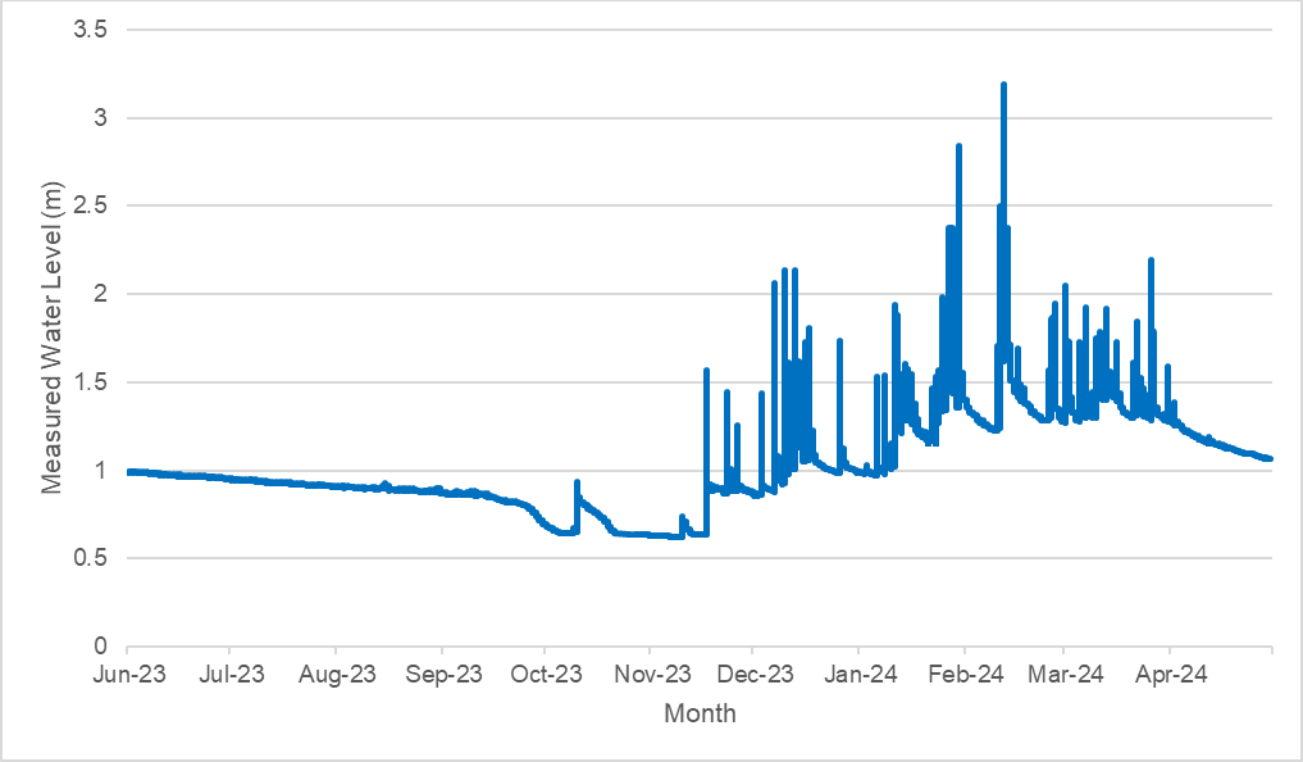


Graph 6-1: Average monthly maximum temperatures (June 2023 – April 2024) vs long-term average monthly maximum temperature (Darwin Airport, station ID 014015) (BOM, 2024)

Monthly rainfall during the months of June to November 2023 was below the long-term average, with rainfall increasing to match the average in December, followed by higher-than-average rainfall in the early months of 2024 (January to March). Rainfall reported in April was below average, indicating an early end to the 2023 / 2024 wet season. A graph of monthly reported rainfall and the long-term average is shown in Graph 6-2. Water levels recorded in Rapid Creek at McMillans Road throughout the reporting period align with reported rainfall. Water levels at the recording gauge began increasing from November 2023, recording the highest levels around late January / early February 2024 and started to decline in early April 2024 (refer Graph 6-3). The wettest month during this wet season was January 2024, however the maximum water level measurement at Rapid Creek (3.002 to 3.189 mm) occurred on 12 February 2024. This day coincided with the highest rainfall recorded during this wet season with 177.7 mm recorded on that day.



Graph 6-2: Total monthly rainfall (June 2023 – April 2024) vs long-term average monthly rainfall (Darwin Airport, station ID 014015) (BOM, 2024)



Graph 6-3: Rapid Creek water level (downstream at McMillans Road – station ID G8150127), June 2023 to April 2024 (BOM, 2024)

The first wet season surface water event of this reporting period occurred in December 2023, which targeted (as soon as practicable) the start of the higher rainfall period. This is because as the end-of-dry-season / start-

of-wet-season is normally characterised by spikes in surface water concentrations (i.e., “first-flush” sampling). Given the below average rainfall in November 2023, the sampling in December 2023 is considered to have functioned as the first-flush event for this wet season.

7. MONITORING DATA SUMMARY

A summary of monitoring completed in this reporting period is provided in Table 3-2, Section 3.2. Groundwater, surface water and biota sampling locations are shown in Figure 2, Figure 3 and Figure 4 (Appendix A), respectively. A detailed analysis of these results is provided in Section 8.

The monitoring events completed during this reporting period have been reported in the following factual reports:

- AECOM, Dry Season Sampling Event Factual Report 2023 (AECOM, 2024a) includes monitoring events in:
  - June 2023 – *Note: no sampling was completed in June 2023, however the lack of sampling in this month is discussed in this factual report*
  - August 2023
  - October 2023[2]
- AECOM, Wet Season Sampling Event Factual Report, 2024 (AECOM, 2024b) includes monitoring events in:
  - December 2023
  - January 2024
  - February 2024
  - March 2024
  - April 2024

7.1 GROUNDWATER RESULTS

7.1.1 Monitoring well network condition

Much of the monitoring well network was observed to be in good condition with the following exceptions:

- Contingency well MW235 requires casing to be corrected or well reinstated.
- MW112 is either buried by earthworks being conducted in the area (runway upgrade) or has been destroyed. If location cannot be rectified in future events, replacement may be required.

7.1.2 Groundwater field observations

The field observations recorded during the groundwater monitoring events (GMEs) (October 2023 and March 2024), including groundwater elevation and water quality parameters are provided in Table C1, Appendix C and summarised in Table 7-1 below.

Table 7-1: Groundwater field observations summary

	End of dry season	End of wet season
Factual report	AECOM, 2024a	AECOM, 2024b
Sample dates	30 and 31 October 2023 and 9 November 2023	4, 5 and 20 March 2024

[2] As outlined in Table 3-3, Section 3.3, MW128 was sampled on 9 November due to delay in obtaining access to this well, however for the purposes of this report is considered to be part of the October GME.

	End of dry season	End of wet season
Colour	Groundwater colour was not recorded during this GME.	Groundwater in MW176, MW209 and MW215 were observed to be brown. Groundwater in MW185, MW191, MW200 and MW454 were observed to be light brown. All other wells were observed to be colourless.
Turbidity	High turbidity at the bottom of the Hydrasleeve™ was observed at MW103, MW107, MW148, MW176, MW180, MW190, MW209, MW210, MW215, MW452 and MW454. Moderate turbidity was observed at MW115, MW139, MW144, MW185, MW191, MW200, MW205, MW211, MW303 and MW451. Low turbidity was observed at MW133, MW141, MW156 and MW297.	Observations around turbidity was not recorded for most wells. Low turbidity was recorded for MW115, MW156, MW197, MW205 and MW456.
Odour	A strong hydrocarbon odour was observed at MW133, MW297 and MW303.	A hydrocarbon odour was observed in wells MW133 and MW292. A strong hydrocarbon odour was observed in wells MW241 and MW297. A 'slight odour' was recorded at MW197 – no further description of the odour was provided.
Other observations	Wells MW197, MW234, MW240, MW241 and MW453 were dry.	No sheen was observed in any wells.

7.1.3 Groundwater elevation

The standing water level (SWL) was gauged in all wells prior to sampling (measured in metres below top of casing (m BTOC) and converted to groundwater elevations in m AHD). The groundwater gauging results are presented in Table C1, Appendix C and summarised in Table 7-2 below.

Table 7-2: Summary of groundwater elevations

Sampling Event	No. Wells	Min. SWL	Max. SWL	Min. SWL	Max. SWL
		m BTOC	m BTOC	m AHD	m AHD
Dry season (October – November 2023)	27	2.089 (MW190)	12.748 (MW180)	2.508 (MW185)	20.652 (MW200)
Wet season (March 2024)	33	0.473 (MW185)	4.212 (MW211)	4.993 (MW210)	25.055 (MW180)

7.1.4 Groundwater flow directions

The groundwater elevation data are tabulated in Table C1, Appendix C. Inferred groundwater contours and flow directions from the October 2023 GME and from the March 2024 GME are presented in Figure 5A and Figure 5B, (Appendix A), respectively.

A localised groundwater high point was recorded in both GMEs in the centre of the base (south of the main runway), and the groundwater flow direction radiates from this location, flowing in an arc from north to west towards Rapid Creek and Ludmilla Creek respectively. Groundwater to the south of the base flows towards Charles Darwin National Park and Francis Bay. The groundwater contours are consistent with the DSI

(Coffey, 2018a) and Supplementary DSI (Coffey, 2018d) flow directions and those of previous monitoring events completed since 2019.

7.1.5 Groundwater quality field measurements

Groundwater quality field measurements recorded during sampling are tabulated in Table C1, Appendix C. A summary of maximum and minimum field parameters for this reporting period, along with historical maximum and minimums for the nominated OMP wells is presented in Table 7-3 below.

Table 7-3: Groundwater quality parameter ranges

	Historical (April 2017 to March 2023)	Dry season (October to November 2023)	Wet season (March 2024)
No. of samples	376	27	28
Dissolved Oxygen (mg/L)	0.07 (MW303) to 5.20 (MW180) *Poor to moderately oxygenated conditions*	0.84 (MW303) to 4.68 (MW115) *Poor to moderately oxygenated conditions*	0.95 (MW297) to 5.28 (MW180) *Poor to moderately oxygenated conditions*
Electrical Conductivity (µS/cm)	23.6 (MW194) to 63,307 (MW201) *Freshwater to saline conditions*	41.2 (MW239) to 1,794 (MW209) *Freshwater to slightly saline conditions*	2.1 (MW211) to 1,622 (MW209) *Freshwater to slightly saline conditions*
pH	3.9 (MW241) to 8.6 (MW115) *Acidic to mildly basic conditions*	4.22 (MW180) to 5.65 (MW303) *Acidic to moderately acidic conditions*	4.66 (MW115) to 6.33 (MW451) *Acidic to slightly acidic conditions*
Corrected redox[1] (mV)	130.8 (MW241) to 500 (MW139) *Oxidising conditions*	188.1 (MW303) to 417.1 (MW209) *Oxidising conditions*	213.6 (MW297) to 395.9 (MW141) *Oxidising conditions*
Temperature (°C)	26.5 (MW144) to 43.94 (MW148)	29.5 (MW156) to 33.7 (MW180)	28.7 (MW133) to 33.3 (MW180)

Note:

1. Corrected redox - – Redox is measured as the electrical response from a standard hydrogen electrode (SHE). However, SHEs are not practicable to use outside of a laboratory, and alternative electrodes are used for field measurements. The results from a field electrode have been converted to SHE units by applying a ratio specific to the field electrode used and the temperature of the water measured. .

7.1.6 Groundwater PFAS analytical results

The groundwater analytical results, including historical results, are presented in Table C2, Appendix C. Groundwater sampling locations are shown in Figure 2, Appendix A.

A summary of PFOS+PFHxS and PFOA concentrations in this reporting period are provided in Table 7-4 below and presented in Figure 6A and Figure 6B (Appendix A), respectively.

Deviations from the historical groundwater dataset are summarised in Table 7-5. MW502 was first installed within the reporting period and no historical data is available for this well.

Table 7-4: Summary of PFOS, PFOS+PFHxS and PFOA concentrations in groundwater

Sampling Event	No. of Samples[1]	Analyte	Concentration Range (µg/L)	No. samples > LOR[1]	No. samples > Human Health Criteria[1]	No. samples > Ecological Criteria[1,2]
End of dry season (October 2023)	28	PFOS	<0.01 (Multiple) to 201 (1302_MW115_231031)	26	*n/a*[3]	26
		PFOS+PFHxS	<0.01 (Multiple) to 228.0 (1302_MW115_231031)	26	25	*n/a*[3]
		PFOA	<0.01 (Multiple) to 2.78 (1302_MW303_231030)	21	4	0
End of Wet season (March 2024)	43	PFOS	<0.01 (1302_MW209_240305) to 51.0 (1302_MW115_240320)	42	*n/a*[3]	42
		PFOS+PFHxS	<0.01 (1302_MW209_240305) to 66.9 (1302_MW115_240320)	42	42	*n/a*[3]
		PFOA	<0.01 (Multiple) to 2.60 (1302_MW240_240320)	29	8	0

Notes:

1. All samples (primary and duplicates)
2. As ecological criteria is below laboratory LOR, only samples above the LOR have been included.
3. *n/a* indicates that there are no criteria for the relevant analyte.

Table 7-5: Deviations from historical groundwater dataset

Deviation	PFOS			PFOS+PFHxS (Sum)			PFOA		
First time detections	*None*			*None*			*None*		
New exceedances of ecological criteria[1]	*None*			*n/a[3]*			*None*		
New exceedances of human health[2] criteria	*n/a[3]*			*None*			*None*		
New minimums	**Sample**	**New min.**	**Previous min.**	**Sample**	**New min.**	**Previous min.**	**Sample**	**New min.**	**Previous min.**
	MW107 (05/03/2024)	4.51 µg/L	5.4 µg/L (09/03/2024)	MW107 (05/03/2024 & 30/10/2023)	6.24 µg/L & 8.15 µg/L	8.46 µg/L (09/03/2024)	MW107 (05/03/2024 & 30/10/2023)	0.13 µg/L & 0.14 µg/L	0.15 µg/L (16/12/2019)
	MW128 (20/03/2024)	2.3 µg/L	2.7 µg/L (07/03/2022)	MW128 (20/03/2024)	3.4 µg/L	3.68 µg/L (07/03/2022)	MW240 (04/03/2024 & 20/03/2024)	2.44 µg/L & 2.6 µg/L	2.8 µg/L (08/05/2018)
	MW297 (04/03/2024)	1.06 µg/L	1.07 µg/L (08/03/2022)	MW297 (04/03/2024)	1.42 µg/L	1.44 µg/L (08/03/2022)	MW144 (19/03/2024)	0.02 µg/L	0.026 (20/04/2023)
	MW139 (05/03/2024 & 18/03/2024)	0.21 µg/L & 0.25 µg/L	0.27 µg/L (09/03/2022)	MW139 (05/03/2024 & 18/03/2024)	0.3 µg/L & 0.34 µg/L	0.41 µg/L (09/03/2022)	MW197 (19/03/2024)	0.08 µg/L	0.11 (11/01/2018)
	MW240 (20/03/2024 & 04/03/2024)	14.0 µg/L & 14.4 µg/L	16.0 µg/L (08/05/2018)	MW240 (04/03/2024)	19.6 µg/L	20.0 (08/05/2018)			
	MW451 (30/10/2023)	<0.01 µg/L	0.02 µg/L (10/12/2020)	MW451 (30/10/2023)	<0.01 µg/L	0.02 µg/L (10/12/2020)			
	MW452 (18/03/2024 & 05/03/2024)	1.3 µg/L & 1.74 µg/L	1.86 µg/L (08/03/2022)	MW452 (18/03/2024)	1.95 µg/L	2.75 µg/L (08/03/2022)			
	QC201[4] (31/10/2023)	<0.01 µg/L	0.05 µg/L (28/04/2021)	MW200 (05/03/2024)	0.5 µg/L	0.61 µg/L (08/03/2022)			

Deviation	PFOS			PFOS+PFHxS (Sum)			PFOA		
	MW200 (05/03/2024)	0.3 µg/L	0.36 µg/L (08/03/2022)	MW194 (31/10/2023)	2.51 µg/L	2.6 µg/L (06/05/2022)			
	MW194 (31/10/2023)	1.78 µg/L	1.83 µg/L (06/05/2021)	MW197 (19/03/2024)	5.69 µg/L	6.3 µg/L (07/09/2017)			
New maximums	*None*			*None*			*None*		

Notes:

1. Human health criteria for groundwater denotes drinking water guidelines (PFAS NEMP 2.0 (HEPA, 2020))
2. As ecological criteria is below laboratory LOR, only samples above the LOR have been included.
3. *n/a* indicates that there are no criteria for the relevant analyte
4. The primary sample MW176 reported a concentration of 0.07 µg/L (exceeding the PFOS ecological criteria).
5. Duplicate of MW128.

7.2 SURFACE WATER

7.2.1 Surface water field observations

The field observations during surface water sampling are provided in Table C3, Appendix C, and summarised in Table 7-6 below.

Table 7-6: Surface water field observations summary

	Dry season	Wet season
Factual report	AECOM, 2024a	AECOM, 2024b
Clarity	*n/a – not recorded*	Low to high clarity
Colour	Colourless	Colourless to brown
Flow	*n/a – not recorded*	No flow to high flow
Turbidity	Moderate turbidity	*n/a – not recorded*
Odour	No odour	No odour
Sheen	Organic sheen observed	No sheen to organic sheen

7.2.2 Surface water quality field measurements

Surface water quality field measurements recorded during sampling are tabulated in Table C3, Appendix C. A summary of the maximum and minimum water quality field parameters for the reporting period, along with historical maximum and minimums is presented in Table 7-7 below.

Table 7-7: Surface water quality parameter ranges

Event	No. of samples	Dissolved Oxygen (mg/L)	Electrical Conductivity (µS/cm)	pH	Corrected redox[1] (mV)	Temperature (°C)
Historical	95	0.01 (SW124) to 7.50 (SW112) *Poor to oxygenated conditions*	19.5 (SW115) to 71,652.0 (SW120) *Freshwater to saline conditions*	4.98 (SW114) to 9.55 (SW133) *Acidic to basic conditions*	102.4 (SW300) to 422.8 (SW108) *Oxidising conditions*	26.1 (SW113) to 33.9 (SW168)
Monthly and start of wet season (December 2023)	17	1.57 (SW160) to 10.35 (SW125) *Poor to oxygenated conditions*	9.5 (SW181) to 580.27 (SW124) *Freshwater conditions*	5.34 (SW108) to 9.16 (SW125) *Acidic to basic conditions*	202.6 (SW114) to 286.8 (SW133) *Oxidising conditions*	26.1 (SW162) to 32.5 (SW115 & SW168)
January 2024 (monthly wet season)	3	5.94[2] (SW170) to 8.75[2] (SW109) *Oxygenated conditions*	52.3 (SW170) to 85.7 (SW109) *Freshwater conditions*	6.8 (SW170) to 7.6 (SW109) *Slightly acidic to slightly basic conditions*	256.6 (SW109) to 293.3 (SW170) *Oxidising conditions*	26.8 (SW312) to 27.4 (SW109)
February 2024 (monthly wet season)	3	4.15 (SW170) to 5.67 (SW312) *Moderately oxygenated conditions*	30.4 (SW312) to 49.0 (SW170) *Freshwater conditions*	5.81 (SW170) to 7.96 (SW312) *Slightly acidic to slightly alkaline conditions*	*Not collected*	29.1 (SW109) to 33.5 (SW312)
Monthly and end of wet season (March 2024)	22	0.53 (SW160) to 5.16 (SW12) *Poor to oxygenated conditions*	27.6 (SW312) to 42,836 (SW124) *Freshwater to brackish conditions*	5.38 (SW168) to 8.5 (SW125) *Acidic to basic conditions*	291.1 (SW109) to 380.2 (SW124) *Oxidising conditions*	28 (SW178) to 31.2 (SW168)
Dry season (April 2024)	2	2.48 (SW109) *Moderately oxygenated conditions*	49.3 (SW109) to 83.6 (SW170) *Freshwater conditions*	4.82 (SW170) to 5.81 (SW109) *Acidic conditions*	372.4 (SW170) to 357.6 (SW109) *Oxidising conditions*	28.4 (SW170) to 28.9 (SW109)

Note:

1. Corrected redox – Corrective relative to the potential of the SHE (as detailed in the note to Table 7-3).
2. Conversion made from DO% (Sat) to mg/L using USGS on-line calculator (https://water.usgs.gov/cgi-bin/dotables), BoM barometric pressure from 24/01/2024 and the machine reading for temperature and electrical conductivity.

7.2.3 Surface water PFAS analytical results

The surface water analytical results, including historical results, are presented in Table C4, Appendix C. Surface water sampling locations are shown in Figure 3, Appendix A.

A summary of PFOS, PFOS+PFHxS and PFOA concentrations in this reporting period (i.e., are provided in Table 7-8 below and presented in Figure 7A and Figure 7B, Appendix A, respectively.

Deviations from the historical surface water dataset are summarised in Table 7-9.

Table 7-8: Summary of PFOS, PFOS+PFHxS and PFOA concentrations in surface water

Sampling Event	No. of Samples[1]	Analyte	Concentration Range (µg/L)	No. samples > LOR[1]	No. samples > Human Health Criteria[1]	No. samples > Ecological Criteria[1,2]
Dry season (August 2023)	3	PFOS	0.53 (1302_QC200_230830)[3] to 1.1 (1302_SW109_230803)	3	*n/a*[4]	3
		PFOS+PFHxS	1.11 (1302_QC200_230830)[3] to 1.84 (1302_SW109_230803)	3	0	*n/a*[4]
		PFOA	0.021 (1302_QC200_230830)[3] to 0.04 (1302_QC100_230803)[5]	3	0	0
Monthly and start of wet season (December 2023)	23	PFOS	<0.01 (Multiple) to 1.06 (1302_SW168_231206)	19	*n/a*[4]	19
		PFOS+PFHxS	<0.01 (Multiple) to 1.72 (1302_SW168_231206)	19	0	*n/a*[4]
		PFOA	<0.01 (Multiple) to 0.05 (1302_SW168_231206)	8	8	8
January 2024 (monthly wet season)	3	PFOS	0.029 (1302_QC200_240124)[6] to 0.21 (1302_SW109_240124)	3	*n/a*[4]	3
		PFOS+PFHxS	0.029 (1302_QC200_240124)[6] to 0.32 (1302_SW109_240124)	3	1	*n/a*[4]
		PFOA	<0.01 (Multiple)	0	0	0
February 2024 (monthly wet season)	3	PFOS	0.26 (1302_SW109_240215) to 0.66 (1302_QC100_240215)[7]	3	*n/a*[4]	3
		PFOS+PFHxS	0.38 (1302_SW109_240215) to 0.94 (1302_QC100_240215)[7]	3	0	0
		PFOA	<0.01 (Multiple) to 0.02 (1302_SW170_240215)	1	0	0
Monthly and end of wet season (March 2024)	22	PFOS	<0.01 (1302_SW115_240306) to 3.2 (1302_SW312_240306)	21	*n/a*[4]	21
		PFOS+PFHxS	<0.01 (1302_SW115_240306) to 3.74 (1302_SW114_240306)	21	4	*n/a*[4]
		PFOA	<0.01 (Multiple) to 0.09 (1302_SW125_240306)	11	0	0
Dry season (April 2024)	1	PFOS	0.54 (1302_SW109_240430)	1	*n/a*[4]	1
		PFOS+PFHxS	0.82 (1302_SW109_240430)	1	0	*n/a*[4]

Sampling Event	No. of Samples[1]	Analyte	Concentration Range (µg/L)	No. samples > LOR[1]	No. samples > Human Health Criteria[1]	No. samples > Ecological Criteria[1,2]
		PFOA	0.01 (1302_SW109_240430)	1	0	0

Notes:

1. All samples (primary and duplicates).
2. As ecological criteria is below laboratory LOR, only samples above the LOR have been included.
3. Triplicate (Inter-Laboratory) sample paired with primary sample 1302_SW109_230830.
4. *n/a* indicates that there are no criteria for the relevant analyte.
5. Duplicate (Intra-Laboratory) sample paired with primary sample 1302_SW109_230830.
6. Triplicate (Inter-Laboratory) sample paired with primary sample 1302_SW312_240124.
7. Duplicate (Intra-Laboratory) sample paired with primary sample 1302_SW170_240215.

Table 7-9: Deviations from historical surface water dataset

Deviation	PFOS			PFOS+PFHxS (Sum)			PFOA		
First time detections	*None*			*None*			*None*		
New exceedances of ecological criteria[1]	*No*			*n/a[3]*			*No*		
New exceedances of human health criteria[2]	*n/a[3]*			*No*			*No*		
New minimums	**Sample**	**New min.**	**Previous min.**	**Sample**	**New min.**	**Previous min.**	*None*		
	QC201[4] (14/12/2023)	0.11 µg/L	0.16 µg/L (14/03/2022)	QC201[4] (14/12/2023)	0.11 µg/L	0.22 µg/L (14/03/2022)			
	SW170 (13/12/2023)	0.07 µg/L	0.09 µg/L (14/04/2023)	SW170 (24/01/2024)	0.05 µg/L	0.11 µg/L (14/04/2023)			
	QC200[5] (24/01/2024)	0.03 µg/L	0.1 µg/L (13/12/2023)	QC200[5] (24/01/2024)	0.04 µg/L	0.73 µg/L (22/12/2022)			
	SW106 (06/12/2023)	0.04 µg/L	0.14 µg/L (12/11/2021)	SW106 (06/12/2023)	0.06 µg/L	0.25 µg/L (12/11/2021)			
	SW109 (24/01/2024)	0.21 µg/L	0.26 µg/L (21/02/2023)	SW108 (06/03/2024)	0.52 µg/L	0.54 µg/L (21/01/2020)			
	SW132 (06/12/2023)	0.01 µg/L	0.03 µg/L (23/01/2020)	SW109 (24/01/2024)	0.32 µg/L	0.36 µg/L (21/02/2023)			
				SW132 (06/12/2023)	0.01 µg/L	0.03 µg/L (23/01/2023)			
New maximums	**Sample**	**New max.**	**Previous max.**	**Sample**	**New max.**	**Previous max.**	**Sample**	**New max.**	**Previous max.**
	SW160 (06/03/2024)	0.32 µg/L	0.26 µg/L (25/12/2022)	SW160 (06/03/2024)	0.48 µg/L	0.31 µg/L (25/11/2022)	SW170 (15/02/2024)	0.02 µg/L	0.01 µg/L (06/04/2022)

Notes:

1. Human health criteria for surface water denotes recreational guidelines (PFAS NEMP 2.0 (HEPA, 2020))
2. As ecological criteria is below laboratory LOR, only samples above the LOR have been included.
3. *n/a* indicates that there are no criteria for the relevant analyte.
4. QC201 is an Inter-Laboratory (Triplicate) sample with the primary sample being 1302_SW152_231214.
5. QC200 is an Inter-Laboratory (Triplicate) sample with the primary sample being 1302_SW312_230124.

7.3 AQUATIC BIOTA

Aquatic biota (edible fish, crustaceans and molluscs) monitoring is conducted once per year at the end of the dry season within the Management Area in Ludmilla Creek and Rapid Creek. The monitoring data is used to assess changes in PFAS concentrations in aquatic biota over time and confirm ongoing relevance of data used to inform the Northern Territory Department of Health (NT Health).

All locations nominated in the SAQP for biota sampling were sampled in this reporting period.

The aquatic biota results for the reporting period are presented in Table C5, Appendix C and locations shown in Figure 4, Appendix A.

The PFOS, PFOA and PFOS+PFHxS concentrations for the reporting period are summarised in Table 7-10 below.

Table 7-10: Summary of PFOS, PFOS+PFHxS and PFOA concentrations in biota

Sampling Event	No. of Samples[1]	Analyte	Concentration Range (mg/kg)	No. samples > LOR	No. samples exceeding criteria for finfish (all species)	No. samples exceeding criteria for crustaceans (all species)
BIO007 – Rapid Creek mouth						
October 2023	23 finfish samples	PFOS	<0.0003 to 0.084	20	12	*n/a*[2]
		PFOS+PFHxS	<0.001 to 0.084	20	12	*n/a*[2]
		PFOA	<0.0001 to 0.00015	1	0	*n/a*[2]
BIO016 – Ludmilla Creek (estuarine area)						
October 2023	5 invertebrate samples	PFOS	0.008 to 0.018	5	*n/a*[2]	0
		PFOS+PFHxS	0.008 to 0.018	5	*n/a*[2]	0
		PFOA	<0.0001 to 0.009	3	*n/a*[2]	0
BIO018 – Ludmilla Creek boat ramp						
October 2023	19 finfish samples, 3 crustacean samples	PFOS	<0.0003 to 0.011	14	2	0
		PFOS+PFHxS	<0.008 to 0.011	14	2	0
		PFOA	<0.0001 to 0.001	1	*n/a*[2]	0
BIO024 – Rapid Creek freshwater – upstream of Trower Road						
October 2023	3 crustacean samples	PFOS	0.015 to 0.059	3	*n/a*[2]	0
		PFOS+PFHxS	0.02 to 0.074	3	*n/a*[2]	1
		PFOA	<0.0001 to 0.001	1	*n/a*[2]	0
BIO026 – Rapid Creek freshwater – upstream of Trower Road						
October 2023	4 crustacean samples	PFOS	0.02 to 0.37	4	*n/a*[2]	1
		PFOS+PFHxS	0.027 to 0.42	4	*n/a*[2]	1
		PFOA	<0.0001	0	*n/a*[2]	0

Sampling Event	No. of Samples[1]	Analyte	Concentration Range (mg/kg)	No. samples > LOR	No. samples exceeding criteria for finfish (all species)	No. samples exceeding criteria for crustaceans (all species)
BIO028 – Rapid Creek freshwater – upstream of Trower Road						
October 2023	3 crustacean samples	PFOS	0.023 to 0.058	3	*n/a*[2]	0
		PFOS+PFHxS	0.031 to 0.078	3	*n/a*[2]	1
		PFOA	<0.0001 to 0.01	1	*n/a*[2]	0

Notes:

1. All samples (primary and duplicates)
2. *n/a* indicates that there are no criteria for the relevant analyte.

8. INTERPRETIVE ANALYSIS

In addition to reporting period data, historical data from 2017 to 2023 was included in the assessment to analyse temporal trends. The historical data was obtained from the historical documents as outlined in Section 1.3 of this report.

Where sufficient data was available, Mann-Kendall statistical analysis has been used to assess trends at individual monitoring locations. Where a location appears to be seasonally influenced, and where there is sufficient dataset, the Mann-Kendall statistical analysis was undertaken for the separated wet season and dry season datasets.

For surface water, in addition to Mann-Kendall analysis (where there was sufficient data), temporal trend assessment of scatter plots presenting concentrations against daily rainfall averages was also carried out.

8.1 HYDROGEOLOGY

Historical and recent groundwater elevations recorded during GMEs undertaken are presented in Table C1, Appendix C with inferred groundwater contours and flow directions presented in Figure 5A and Figure 5B, Appendix A respectively.

Groundwater levels fluctuate over wet and dry seasons, with the highest groundwater levels recorded in late wet season and lowest groundwater levels in late dry season.

Groundwater levels have been reported to fluctuate by over 13.5 metres between late wet and late dry seasons in the CFTA source area (i.e., at MW453, noting the fluctuation is listed as over 13.5 m as the groundwater well was dry during wet season so the water level beneath the base of the well, i.e., 15 m bgl is not known). Other groundwater wells in that area, MW240 and MW241 were also dry during dry season and based on depths of these wells, i.e.,14.5 m bgl, the groundwater fluctuation in these wells was over 12.4 m between wet and dry seasons.

Groundwater levels fluctuated by less than 1 metre between wet and dry seasons adjacent to Rapid Creek (MW191, MW190(MW201, MW452 and MW128). Monitoring well MW191 recorded the lowest fluctuation of 0.106 m between the highest and lowest groundwater level recorded.

Inferred groundwater flow during the reporting period at the base follows localised topography and is consistent with what was reported in the DSI (Coffey, 2018a) and Supplementary DSI (Coffey, 2018d). Groundwater flows:

- to the north (towards Rapid Creek) from the southern side of the main runway,
- to the south (towards Sadgroves and Reichardt Creeks) in the south of the base, and
- to the west and southwest (towards Ludmilla Creek) in the southwest of the base.

8.2 GROUNDWATER RESULTS

The highest PFAS concentrations for GMEs conducted during the monitoring period (October 2023 and March 2024) were detected within PFAS source areas, in line with the CSM. Specifically, the maximum concentrations of PFOS+PFHS reported during the monitoring period were:

- Former ARFF Fire Station: 228 µg/L and 66.9 µg/L at MW115 (October 2023 and March 2024 respectively), and
- FFF4: 93.7 µg/L at MW303 (October 2023).

Historically, MW422 reported some of the highest concentrations of PFOS+PFHxS (328 µg/L in March 2022). This groundwater well was decommissioned as part of the FFTA1 remediation works, and replacement well MW502 was installed within the source area after the completion of the remediation works (Tetra Tech Coffey, 2024). MW502 has been sampled once and reported a PFOS+PFHxS concentration of 6.96 µg/L. Groundwater well MW502 was installed with the same well screening as MW422 (i.e. screened from 1 m bgl to depth of well).

Groundwater well MW240, located in CFTA, also historically reported elevated PFOS+PFHxS concentrations at 102 µg/L in November 2020, at the end of dry season GME (when the groundwater levels were lowest). As this groundwater well has been dry at the end of all subsequent dry seasons, the groundwater concentrations in that source area at the end of the dry season has not been analysed.

As also reported in the previous Ongoing Monitoring Interpretive Report, (AECOM, 2023a), PFOS, PFOA and/or PFHxS concentrations were detected in monitoring wells down-hydraulic gradient from the identified PFAS source areas and indicates that groundwater impacts are migrating from these sources.

The maximum PFOS+PFHxS concentrations outside PFAS source areas were reported at:

- MW210, located within the residential area of Ludmilla, located west of the base (3.29 µg/L in October 2023), and
- MW194, located on the northwestern boundary of the base, adjacent to Rapid Creek (2.68 µg/L in March 2024).

Concentrations of PFOS, PFHxS and/or PFOA did not exceed previous maximum concentrations in any groundwater wells in this reporting period. New minimums were reported at fourteen locations during this reporting period, namely:

- ten locations for new PFOS minimums,
- thirteen locations for new PFOS+PFHxS minimums, and
- six locations for new PFOA minimums.

Refer to Table 7-5, Section 7.1.6 for a summary of new minimums. Most of the PFAS concentrations in groundwater monitoring locations were within historical ranges, however some decreases in concentrations were reported. The new minimums were reported for at least one analyte in each region of the base (refer to Table 8-1, Section 8.3.1 for a summary of wells in regions across the base).

8.3 GROUNDWATER TRENDS

8.3.1 Overview

Groundwater analytical results are presented in Table C2, Appendix C. Temporal graphs and Mann-Kendall analysis outputs for PFOS+PFHxS and PFOA concentrations in groundwater are included in Appendix D and Appendix E respectively. Groundwater wells have been grouped into indicative regions of interest as summarised in Table 8-1 below.

Table 8-1: Summary of groundwater well groupings

Region of interest	Groundwater locations	Temporal graph reference (Appendix D)
West	MW103, MW107, MW125, MW128, MW148, MW201, MW209, MW210, MW215, MW405, MW451, MW452	Graph D1 and Graph D2
North	MW156, MW194, MW240, MW241, MW453, MW185, MW189, MW190, MW191, MW193, MW195, MW197	Graph D3 and Graph D4
Central	MW115, MW133, MW144, MW205, MW292, MW303	Graph D5 and Graph D6
Southeast	MW112, MW139, MW141, MW235, MW297, MW422, MW454, MW502	Graph D7 and Graph D8
South of the base	MW176, MW180, MW200, MW211	Graph D9 and Graph D10

Mann-Kendall analysis is a non-parametric test used to identify trends in time series data. The significance of these trends is determined by the confidence factor (i.e., *p value*) of the analysis as follows:

- A confidence factor over 95% indicates there is an *increasing* or *decreasing* trend.
- A confidence factor less than 95% indicates *stable* or *no trend.*

Trend analysis was undertaken for locations which were consistently greater than the LOR. Where sample results were less than the LOR, half the LOR was adopted for the Mann-Kendall analysis.

8.3.2 West monitoring wells

A summary of the monitoring well locations in the western portion of the base is provided below:

- MW103 – located within the Former RAAF Fire Station source area.
- MW107 – located between FFF1 and the Former RAAF Fire Station source areas.
- MW215 – located within the FFF1 source area.
- MW125, MW128, MW148, MW201, MW451, MW452 – located to the southwest and west, down hydraulic gradient, of FFF1 and Former RAAF Fire Station source areas.
- MW405 located at Hangar 31 (destroyed).
- MW209 – located within the residential suburb of The Narrows, south of the base.
- MW210 – located to the west of the base in the residential suburb of Ludmilla and down hydraulic gradient of Hangar 31, FFF1 and the Former RAAF Fire Station source areas.

Monitoring well MW405 (adjacent to Hangar 31) was destroyed during the AIR7000 construction project and has not been sampled since April 2020. Sampling of nearby locations including MW215 in FFF1 and groundwater wells down hydraulic gradient (south and southwest) has facilitated the continuing monitoring of PFAS in the western portion of the base. However, potential changes in close proximity to Hangar 31 are limited due to the lack of wells in this area.

The temporal trend analysis graphs (Graph D1 and Graph D2, Appendix D) show that monitoring wells MW103 (located at the RAAF Fire Station), MW210 (within Ludmilla residential area) and MW405 (formerly located at Hangar 31) experience the following seasonal fluctuations:

- MW103 - an increase in concentrations during dry season but are lower at the end of the wet season. As the water levels rise during the wet season, they intercept the highly permeable laterite at a depth between 2 and 5 m bgl. The large grass area up-gradient of this location would lead to increased infiltration and dilution of PFAS within the shallow laterite as the water levels rise during the wet season.

This increase was not observed in the most recent dry season monitoring event (October 2023) as the water levels during the dry-season sampling event were within the laterite.

- MW210 - increased concentrations during dry season/decrease during the wet season, indicating potential dilution effects from wet season rainfall infiltration. This location is greater than 1 km from the nearest source area and would receive rainfall infiltration from areas not impacted by PFAS resulting in dilution.
- MW405 (up to April 2020) – an increase in concentrations during wet season, indicating there might be vertical migration of contamination driven by increased rainfall and infiltration, along with PFAS impacted surface water runoff from the concrete pad north of the well (around Hanger 31).

In MW210, the concentrations of PFAS were observed to increase slightly at each sampling event between March 2019 and April 2021 with limited seasonal fluctuations observed. However, the seasonal fluctuations were evident prior to and after this. A similar pattern of reduced seasonal fluctuations in this period was also observed at monitoring well MW112, located north of FFF5 (refer Section 8.3.5) and MW200 located south of the base (refer Section 8.3.6). The stability of concentrations in this area of the base coincided with a 'dry' wet season in 2019 (1,170 mm which is approximately 70% of long-term average) with an early rain-burst (140 mm) prior to the end of wet season sampling. This may have resulted in the results for these wells being more indicative of 'wet season' conditions, leading to less seasonal variation in the results for this year.

Groundwater well MW209 (within the suburb of The Narrows) reported PFOS+PFHxS concentrations above LOR in only three monitoring rounds (March 2018 and December 2018 during the DSI, and April 2021). MW209 exceeded the ecological guideline level for PFOS in these monitoring rounds and exceeded the human health guideline level for the PFOS+PFHxS in the March 2018 and December 2018 rounds. All other groundwater results in this region report PFOS+PFHxS concentrations consistently above LOR.

A summary of statistical analysis results is presented in Table 8-2 below, with seasonal trends also included for MW103. There were insufficient seasonal data points for Mann-Kendall seasonal analysis to be undertaken at MW405 on a seasonal basis.

There was no trend reported at well MW405 at Hangar 31, noting that the last monitoring round was in 2019/20.

Monitoring well MW215, within the FFF1 source area reported an increasing trend for PFOA and PFOS+PFHxS over the entire course of the monitoring program. However, the results for both PFOA and PFOS+PFHxS have been reported as stable since early 2020.

A stable trend was reported within the RAAF Fire Station. The wells down hydraulic gradient of the RAAF Fire Station reported either a decreasing or no trend. Groundwater well MW209 in The Narrows reported a decreasing trend and MW210 in Ludmilla, a stable trend.

Table 8-2: Mann-Kendall summary – West

Monitoring well	Analyte	Historical range	Current reporting period	Mann-Kendall trend	
		min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
Within Hangar 31 source area					
MW405	PFOA	0.04 – 0.36	*n/a*[1]	No trend	62.3%
	PFOS+PFHxS	2.03 – 42.2	*n/a*	No trend	50.0%
Within FFF1 source area					
MW215	PFOA	<0.01 – 0.15	0.08	Increasing	98.4%

Monitoring well	Analyte	Historical range	Current reporting period	Mann-Kendall trend	
		min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
	PFOS+PFHxS	0.09 – 9.32	4.38	Increasing	98.1%
Between Former RAAF Fire Station and FFF1 / Hangar 31 source areas					
MW107	PFOA	0.15 – 0.29	0.13 – 0.14	Decreasing	98.6%
	PFOS+PFHxS	8.46 – 14.8	8.15 – 8.5	Decreasing	99.2%
Within Former RAAF Fire Station source area					
MW103 – All	PFOA	0.02 – 1.11	0.19 – 0.2	Stable	73.6%
	PFOS+PFHxS	1.96 – 48.6	9.26 – 13.6	Stable	73.6%
MW103 – wet	PFOA	0.02 – 0.79	0.2	Stable	50%
	PFOS+PFHxS	1.96 – 43.8	9.26	Stable	72.6%
MW103 – dry	PFOA	0.25 – 1.11	0.19	Stable	76.7%
	PFOS+PFHxS	12.7 – 48.6	13.6	Stable	94.1%
Down hydraulic gradient of RAAF Fire Station source area					
MW125	PFOA	<0.01 – 0.15	0.06 – 0.08	Increasing	98.4%
	PFOS+PFHxS	0.09 – 9.32	4.38 – 4.59	Stable	91.0%
MW128	PFOA	0.09 – 0.21	0.11	Decreasing	99.1%
	PFOS+PFHxS	3.68 – 21.8	4.71 – 4.8	Decreasing	98.8%
MW148	PFOA	0.082 – 0.21	0.09	Decreasing	99.7%
	PFOS+PFHxS	4.7 – 11.3	5.03 – 5.3	Decreasing	97.1%
MW451	PFOA	<0.01 – 0.04	< 0.01	No trend	56.0%
	PFOS+PFHxS	0.02 – 3.5	<0.01 – 0.13	Stable	61.8%
MW452	PFOA	0.04 – 0.09	0.04 – 0.06	No trend	61.8%
	PFOS+PFHxS	2.75 – 5.66	1.95 – 2.94	Stable	85.3%
Coconut Grove, Ludmilla					
MW210	PFOA	0.02 – 0.06	0.03 – 0.05	No trend	50.0%
	PFOS+PFHxS	1.32 – 4.31	1.99 – 3.29	Stable	70.7%
The Narrows					
MW209	PFOA	<0.01	<0.01	No trend	50.0%
	PFOS+PFHxS	<0.01 – 0.58	<0.01	Decreasing	99.7%

8.3.3 North monitoring wells

A summary of monitoring well locations in the northern portion of the Management Area is provided below:

- MW156 located adjacent to Rapid Creek, north-west of the end of the runway.
- MW191, MW193, MW190 (alternate to MW193), MW194 and MW195 – located on DIA-occupied land, northeast of the base adjacent to Rapid Creek.
- MW185 – located to the north of McMillans Rd adjacent to Rapid Creek.
- MW197 – located on DIA-occupied land adjacent to the FFTA2 source area.
- MW240, MW241 and MW453 – located at the CFTA source area (on-base).

The temporal trend analysis graphs (Graph D3 and Graph D4, Appendix D) indicate that consistent seasonal variability was not observed at these monitoring wells until end of dry season (November) 2021 where seasonal fluctuations were observed at MW156, MW185 and MW190 (all adjacent to Rapid Creek). The seasonal variations observed included:

- MW156 (located at the northeastern end of the runway) – increased concentrations reported at the end of wet season indicating there may be vertical migration of contamination driven by increased rainfall. As this groundwater well is located down hydraulic gradient of FFTA1 source area, this well would be receiving more PFAS flux from this source area in wet season.
- MW185 and MW190 (located northwest and north of the base) – increased concentrations during the dry season/reduced concentrations in wet season, indicating a potential dilution effect from the wet season. These locations are > 1 km from the nearest source area and would receive rainfall infiltration from areas not impacted by PFAS resulting in dilution.

Concentrations of PFAS have been reported to fluctuate by one or two orders of magnitude in monitoring wells along Rapid Creek (MW156, MW185, MW191 and MW195). The variable PFAS concentrations in groundwater adjacent to Rapid Creek may be due to the variable nature of PFAS within surface water given the surface water / groundwater interactions present along Rapid Creek, as well as significant changes in standing water levels between wet and dry seasons (i.e., between 0.48 and 3.1 m fluctuations, with an average of 1.6 m fluctuations).

The variability in the data set at these locations will likely impact the ability of Mann-Kendall assessments, however as the variability was not observed at each season, no additional seasonal variations of Mann-Kendall analysis was completed for this region.

All locations reported PFOS+PFHxS above LOR, except two sampling events for MW185 conducted in January and March 2018. Concentrations of PFOA varied, with at least one sampling event for groundwater wells located adjacent to Rapid Creek reporting concentrations below LOR. All wells adjacent to the source areas (CFTA and FFTA2) reported detections of PFOA in all sampling events.

PFAS concentrations were significantly (between one and four orders of magnitude) higher in groundwater wells within the CFTA source area wells (MW240, MW241 and MW453) than down-gradient of this source area (MW185, MW189, MW191 and MW193).

A summary of statistical analysis results is presented in Table 8-3 below. Note that monitoring well MW189 (located adjacent to Rapid Creek, northwest of CFTA) and MW453 (located at CFTA) were excluded from Mann-Kendall statistical assessment as less than seven results were available. MW189 and MW193 were not sampled in this reporting period and haven't been sampled since April 2020 and May 2021, respectively.

Groundwater wells adjacent to Rapid Creek reported either a stable trend, no trend or decreasing trends. Groundwater wells adjacent to the source areas (CFTA and FFTA2) were stable. Remediation is planned at both CFTA and FFTA2 source areas which may affect future groundwater results for these monitoring wells.

Table 8-3: Mann-Kendall summary – North

Monitoring well	Analyte	Historical range	Current reporting period	Mann-Kendall trend	
		min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
Adjacent to Rapid Creek					
MW156	PFOA	<0.01 – 0.21	0.04 – 0.13	Stable	86.1%
	PFOS+PFHxS	0.47 – 12.3	5.29 – 8.91	Stable	85.8%
MW185	PFOA	<0.01 – 0.02	<0.01 – 0.01	No trend	75.0%

Monitoring well	Analyte	Historical range	Current reporting period	Mann-Kendall trend	
		min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
	PFOS+PFHxS	<0.01 – 0.6	0.1 – 0.37	No trend	87.9%
MW189	PFOA	<0.01	-[1]	*n/a*[2]	*n/a*[2]
	PFOS+PFHxS	0.05 – 0.08	-[1]	*n/a*[2]	*n/a*[2]
MW190	PFOA	<0.01 – 0.08	<0.01 – 0.04	Stable	94.3%
	PFOS+PFHxS	0.03 – 4.39	0.3 – 1.85	Decreasing	96.8%
MW191	PFOA	<0.01 – 0.06	0.01 – 0.04	Stable	91.3%
	PFOS+PFHxS	0.43 – 3.9	1.46 – 2.46	Decreasing	97.1%
MW193	PFOA	<0.01 – 0.08	-[1]	Decreasing	98.2%
	PFOS+PFHxS	0.13 – 5.0	-[1]	Decreasing	97.9%
MW194	PFOA	0.04 – 0.08	0.04 – 0.05	Stable	87.9%
	PFOS+PFHxS	2.6 - 6	0.51 – 2.68	Decreasing	98.1%
MW195	PFOA	<0.01 – 0.03	<0.01	Stable	86.0%
	PFOS+PFHxS	0.09 – 4.02	0.6 – 0.11	Stable	83.9%
Adjacent to FFTA2 source area					
MW197	PFOA	<0.01 – 0.03	<0.01	Stable	66.0%
	PFOS+PFHxS	0.2 – 4.02	0.6 – 0.11	Stable	94.3%
Adjacent to CFTA source area					
MW240	PFOA	2.8 – 24.0	2.6	Stable	93.7
	PFOS+PFHxS	22.3 – 150.0	19.6	Stable	90.6%
MW241	PFOA	1.55 – 3.6	2.23	Stable	83.1%
	PFOS+PFHxS	9.2 – 28.5	19.6	Stable	58.1%
MW453	PFOA	0.03 – 3.42	2.3 – 2.5	*n/a*[2]	*n/a*[2]
	PFOS+PFHxS	0.32 – 8.18	2.3 – 2.5	*n/a*[2]	*n/a*[2]

Notes:

1. - indicates that there are no concentrations of the respective analyte for this period.
2. *n/a* indicates that there was insufficient data to conduct Mann-Kendall analysis.

8.3.4 Central monitoring wells

A summary of monitoring well locations in the central portion is provided below:

- MW115 – located at the Former ARFF Fire Station source area.
- MW205 – located north of FFF6 (down to cross hydraulic gradient) and FFF4 (cross hydraulic gradient), between the Runway and taxiway.
- MW303, MW133, MW292 (replacement well for MW133) – located within FFF4 and FFF6 source areas.
- MW144 – located at the southern base boundary and down hydraulic gradient from the Former ARFF Fire Station, FFF4, FFF6 and the former Wrapped Stockpile Area.

All central monitoring locations reported PFAS, specifically PFOA and PFOS+PFHxS, concentrations above laboratory LOR during this reporting period.

The temporal trend analysis graphs (Graph D5 and Graph D6, Appendix D) show that seasonal variability was evident in these central wells with PFAS concentration peaks reported at end of dry season and lower concentrations in wet season, indicating a dilution effect from wet season increased infiltration. Groundwater well MW205 has not been sampled since June 2022. Groundwater levels fluctuated significantly in these wells between wet and dry season, with the following changes in SWL recorded between the wet and dry seasons:

- 3.2 to 7.2 m in the former ARFF source area
- 6.0 to 10.2 m in and north of FFF4 and FFF6 source areas
- 0.6 to 3.2 m in the southern boundary area

A summary of statistical analysis results, including seasonal specific analysis, is provided in Table 8-4 below. Monitoring well MW292 (located within FFF4 and FFF6) was excluded from Mann-Kendall statistical assessment as there were insufficient historical results (MW292 has not been sampled since November 2020). PFAS results reported a decreasing trend at the former ARFF Fire Station (PFOA and PFOS+PFHxS), although PFOS+PFHxS concentrations were reported to stable in the dry season only.

The southern base boundary was reported to have stable trends. Wells within and north of FFF4 and FFF6 reported stable trends. A decreasing trend was reported in one well (MW303) for PFOA during dry season only. Remediation is planned at FFF4 and FFF6 in late 2024 which may affect future groundwater results for these monitoring wells.

Table 8-4: Mann-Kendall summary – Central

Monitoring well	Analyte	Season	Historical range	Current reporting period	Mann-Kendall trend	
			min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
At the Former ARFF Fire Station source area						
MW115	PFOA	All	0.79 – 4.1	1.2 – 2.36	Decreasing	99%
		Wet	1.3 – 3.05	1.2	Stable	82.6%
		Dry	1.1 – 4.1	2.36	Stable	89.5%
	PFOS+ PFHxS	All	44.0 – 386.0	66.9 – 228.0	Decreasing	96.6%
		Wet	63.6 – 158.0	66.9	Decreasing	96.2%
		Dry	88.6 – 386.0	228.0	Decreasing	96.8%
North of FFF4 and FFF6						
MW205	PFOA	All	<0.01 – 0.14	0.02 – 0.1	No trend	69.0%
		Wet	<0.01 – 0.1	0.02	Stable	93.1%
		Dry	0.01 – 0.14	0.1	Stable	73.4%
	PFOS+ PFHxS	All	0.7 – 9.0	1.39 – 5.39	Stable	72.1%
		Wet	0.7 – 6.1	1.36	Stable	91.3%
		Dry	1.12 – 9.0	5.93	Stable	50.0%
Within FFF4 and FFF6 source area						
MW303	PFOA	All	0.75 – 3.7	1.23 – 2.78	Stable	86.4%
		Wet	0.84 – 1.44	1.23	Stable	50%
		Dry	1.8 – 3.7	2.78	Decreasing	98.2%
		All	32.0 – 131.0	38.2 – 93.7	Stable	70.5%

Monitoring well	Analyte	Season	Historical range	Current reporting period	Mann-Kendall trend	
			min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
	PFOS+ PFHxS	Wet	32.0 – 64.7	38.2	Stable	50%
		Dry	81.3 – 131.0	93.7	Stable	87%
MW133	PFOA	All	0.27 – 1.4	0.5 – 0.66	Stable	88.3%
		Wet	0.05 – 1.2	0.66	Stable	59.8%
		Dry	<0.01 – 1.4	0.5	Stable	91.3%
	PFOS+ PFHxS	All	14.8 – 133.0	37.0 – 43.5	Stable	86.0%
		Wet	14.8 – 54.8	43.5	Stable	64.5%
		Dry	0.01 - 35.7	37.0	Stable	88.5%
MW292	PFOA	All	0.87 – 1.3	-[1]	*n/a*[2]	*n/a*[2]
	PFOS+ PFHxS		58.0 – 97.0	-[1]	*n/a*[2]	*n/a*[2]
Southern base boundary						
MW144	PFOA	All	0.03 – 0.12	0.04 – 0.06	Stable	89.9%
		Wet	0.03 – 0.07	0.04	Stable	66.2%
		Dry	0.06 – 0.12	0.06	Stable	83.7%
	PFOS+ PFHxS	All	2.15 – 7.9	1.94 – 4.6	Stable	94.1%
		Wet	2.15 – 4.9	1.94	Stable	80.7%
		Dry	4.8 – 7.9	4.6	Stable	76.7%

Notes:
1. - indicates that there are no concentrations of the respective analyte for this period.
2. *n/a* indicates that there was insufficient data to conduct Mann-Kendall analysis.

8.3.5 Southeast monitoring wells

A summary of the monitoring well locations in the southeast area is provided below:

- MW112 – located north of FFF5 (down hydraulic gradient).
- MW422, MW502 (replacement for MW422) – located at FFTA1.
- MW454 – down-gradient plume from FFTA1.
- MW139 – located south of FFTA1 at the base boundary.
- MW141 – located at the southern base boundary, down hydraulic gradient of FFTA1 and FFF5.
- MW297 – located at FFF5.

As noted in the previous interpretive report (AECOM, 2023a), concentration trends at MW422 had been increasing up until the last available sampling event in March 2022. Monitoring well MW422 was unable to be sampled during this reporting period as this well was decommissioned in May 2022 prior to the commencement of remediation works at FFTA1. A replacement well, MW502, was installed within FFTA1 source area (within 2 m of the former location of MW422) upon completion of the remediation works. This well was subsequently sampled in the March 2024 (wet season) GME (AECOM, 2024b). The concentration of PFOA dropped by two orders of magnitude between the last MW422 GME (March 2022) and the first MW502 GME (March 2024) from 12.5 µg/L to 0.16 µg/L. A reduction of one order of magnitude was reported for PFOS+PFHxS, from 93.3 µg/L to 4.28 µg/L. This reduction indicates a reduction in leaching of PFAS from this

source area following remediation. Groundwater well MW502 will continue to be monitored as part of the post-remediation validation sampling, in addition to the ongoing monitoring scope.

MW112 was also not sampled in this reporting period as it is understood to have been destroyed or covered during earthworks (refer Section 3.3).

Temporal trend analysis graphs (Graph D7 and Graph D8, Appendix D) show that monitoring wells MW297 (located at FFF5), MW112 (located north of FFF5) and MW139 (located south of FFTA1) exhibited clear seasonal fluctuations with higher concentrations reported in dry season and lower concentrations in wet season. This indicates potential dilution effects from wet season increased infiltration.

Monitoring wells MW297 and MW139 both reported a one- to two-order of magnitude difference in concentrations between wet and dry seasons. Such a pronounced variation was not observed in MW112. The significantly lower PFAS concentrations reported in the wet season in these wells may be a result of groundwater levels rising into the laterite soils, resulting in rapid rainfall infiltration and dilution of PFAS in groundwater at these locations.

As was observed in MW200, MW210 and MW211 (refer Section 8.3.2 and 8.3.6), groundwater concentrations in MW112 were relatively stable between March 2019 and April 2021, with seasonal fluctuations returning from the November 2021 sampling event.

A summary of statistical analysis results, including seasonal specific analysis for MW112 and MW139, is presented in Table 8-5 below.

Monitoring well MW297 in FFF5 reported a predominantly stable or no trend, except for PFOS+PFHxS which reported a decreasing trend in the wet season. MW112 north of FFF5 also reported decreasing trends (in both PFOA and PFOS+PFHxS) in the dry season when concentrations were lower than in wet season. The dry seasons for both wells continue to report a relatively stable or no trend. Remediation of FFTA1 was completed at during this reporting period and is expected to impact the groundwater concentrations in this well in future events. Groundwater wells south of FFTA1 and well MW454 (north of FFTA1 but also down hydraulic gradient) reported decreasing PFAS trends. It is noted that, due to the gradients in that area, groundwater from FFTA1 flows both to the north and south of FFTA1, with flux to the north (i.e., towards MW454) much larger than to the south.

Table 8-5: Southeast Mann-Kendall summary

Monitoring well	Analyte	Historical range	Current reporting period	Mann-Kendall trend	
		min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
FFF5 source area					
MW297 – all data	PFOA	0.02 – 1.31	0.02 – 0.66	No trend	77.5%
	PFOS+PFHxS	1.44 – 76.3	1.42 – 39.0	No trend	77.0%
MW297 – wet	PFOA	0.02 – 0.15	0.02	Stable	93.4%
	PFOS+PFHxS	1.44 – 9.78	1.42	Decreasing	97.0%
MW297 – dry	PFOA	0.49 – 1.31	0.66	Stable	50.0%
	PFOS+PFHxS	28.0 – 76.3	39.0	Stable	77.4%
North of FFF5 source area					
MW112 – all data	PFOA	0.15 – 0.34	-[1]	Stable	91.4%
	PFOS+PFHxS	8.23 – 28.5	-[1]	Stable	95.0%
MW112 – wet	PFOA	0.15 – 0.34	-[1]	Decreasing	95.8%
	PFOS+PFHxS	8.23 – 18.4	-[1]	Decreasing	96.4%

Monitoring well	Analyte	Historical range	Current reporting period	Mann-Kendall trend	
		min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
MW112 – dry	PFOA	0.27 – 0.33	-[1]	Stable	71.3%
	PFOS+PFHxS	17.9 – 28.5	-[1]	Stable	81.6%
South of FFTA1					
MW139 – all data	PFOA	<0.01 – 0.07	<0.01	Decreasing	99.5%
	PFOS+PFHxS	0.41 – 6.4	0.34 – 1.56	Decreasing	99.6%
MW139 – wet	PFOA	<0.01 – 0.02	<0.01	Stable	83.9%
	PFOS+PFHxS	0.41 – 5.06	0.34	Decreasing	98.9%
MW139 – dry	PFOA	0.02 – 0.07	0.02	Decreasing	97.0%
	PFOS+PFHxS	1.94 – 6.4	1.56	Decreasing	99.9%
North of FFTA1					
MW454	PFOA	0.57 – 0.9	0.5 – 0.66	Stable	85.3%
	PFOS+PFHxS	36.2 – 84.0	27.4 – 38.3	Decreasing	96.4%
Southern base boundary, down hydraulic gradient of FFTA1 and FFF5					
MW141	PFOA	<0.01	<0.01	Stable	50.0%
	PFOS+PFHxS	0.21 – 0.45	0.30 – 0.32	Stable	91.7%

Notes:
1. - indicates that there are no concentrations of the respective analyte for this period.

8.3.6 South of the base monitoring wells

A summary of monitoring well locations south of the base is provided below:

- MW176, MW180, MW200 and MW211 – located in Winnellie, south of the base, down hydraulic gradient of the source areas south of the main runway (i.e., FFTA1, FFF5, FFF4, FFF6, former ARFF Fire Station and the former Wrapped Stockpile Area).

The temporal trend analysis graphs (Graph D9 and Graph D10, Appendix D) indicate that monitoring wells MW211 and MW200 (both located in Winnellie) reported increased concentrations during dry season and decrease during wet season, indicating potential dilution effects from wet season rainfall infiltration.

In MW200, the concentrations of PFAS were observed to remain relatively stable between March 2019 and April 2021, however the seasonal fluctuations were evident prior to and after this. A similar trend was observed at MW211, with seasonal fluctuations returning from the November 2020 sampling event. The stability of concentrations in this area of the base coincided with a ‘dry’ wet season in 2019 (1,170 mm which is approximately 70% of long-term average) with an early rain-burst (140 mm) prior to the end of wet season sampling. This may have resulted in the results for these wells being more indicative of ‘wet season’ conditions, leading to less seasonal variation in the results for this year.

The variability in the data set at these locations will likely impact the ability of Mann-Kendall assessments, however as the variability was not observed in sufficient seasons to provide more than seven data points, and no additional seasonal variations of Mann-Kendall analysis was completed for this region.

All groundwater results in this region consistently report PFOS+PFHxS concentrations above LOR. PFOA was regularly detected in MW200 and detected once in MW176 (September 2022). Groundwater wells MW211 and MW180 have not historically reported any detections of PFOA.

Remediation works were recently completed at FFTA1 and the former Wrapped Stockpile Area during this reporting period (at the end of 2023). Further remediation works are scheduled in late 2024 for FFF4 and FFF6. The impact of the completed and planned remediation may impact the future groundwater results for wells in this area.

As only one monitoring round has been completed following the remediation of FFTA1 and the former Wrapped Stockpile Area, coinciding with historically reported decreases in PFAS at the end of wet season, it is unclear if this has had a material impact on these wells to date.

A summary of statistical analysis results is presented in Table 8-6 below. PFOA was reported at a stable or no trend for all wells. MW200 in Winnellie reported PFOS+PFHxS with a decreasing. The other two wells (MW176 and MW180) reported a stable or no trend.

Table 8-6: South of the base Mann-Kendall summary

Monitoring well	Analyte	Historical range	Current reporting period	Mann-Kendall trend	
		min – max (µg/L)	min – max (µg/L)	Trend	Confidence factor
Winnellie					
MW176	PFOA	<0.01 – 0.01	<0.01	Stable	50.0%
	PFOS+PFHxS	0.1 – 0.15	0.1 – 0.13	Stable	92.5%
MW180	PFOA	<0.01	<0.01	Stable	50.0%
	PFOS+PFHxS	0.05 – 0.27	0.07 – 0.09	No trend	72.3%
MW200	PFOA	<0.01 – 0.06	<0.01 – 0.03	Stable	78.6%
	PFOS+PFHxS	0.61 – 4.1	0.5 – 1.52	Decreasing	99.9%
MW211	PFOA	<0.01	<0.01	Stable	50.0%
	PFOS+PFHxS	0.03 – 0.58	0.08 – 0.32	Stable	93.7%

8.3.7 Summary

The nature and extent of groundwater PFAS are consistent with the understanding presented in the previous OMP interpretive report (AECOM, 2023b), apart from the following changes identified during this reporting period:

- PFAS concentrations at MW502 (a replacement for MW422) recorded PFOA and PFOS+PFHxS concentrations two orders of magnitude below historical concentrations. MW502 was installed in FFTA1 less than two metres from the former MW422 following the completion of remediation in this source area. These reduced concentrations are anticipated to remain, as are reduced concentrations down hydraulic gradient (i.e., to the north and south) of FFTA1. The concentrations here will continue to be monitored for changes as part of the OMP, and also as part of the post-remediation monitoring for this area.
- PFAS concentrations within the former RAAF Fire Station (MW103) historically reported an increasing trend in the previous interpretive report, the statistical analysis undertaken following the last wet season sampling event (March 2024) indicates there is no trend at this location.
- Groundwater concentrations within FFF1 (MW215) indicate an increasing trend when the entire dataset is modelled. However, where the results from the OMP program (2019 onwards) are modelled, the trend in concentrations was reported as stable.
- Groundwater concentrations south of the PFAS reported stable concentrations in MW200 and MW211, but following the sampling in the current reporting period, concentrations trends for PFOS+PFHxS showed decreasing trends in MW200.

8.4 SURFACE WATER RESULTS

PFAS analytical results, tabulated against adopted guidelines, are provided in Table C4, Appendix C. A summary of PFOA and PFOS concentration in surface water is presented in Figure 7A and Figure 7B, Appendix A. PFOS, PFOA and/or PFHxS concentrations were detected in surface water monitoring locations across the Management Area.

The highest PFAS concentrations, exceeding the human health criteria in at least one sampling event in this reporting period, were from locations:

- Drainage leading from FFTA1 (March 2024) with a PFOS+PFHxS concentration of 3.67 µg/L reported in March 2024. This is one- to two-orders of magnitude above the concentrations reported in the preceding months (0.029 – 0.04 µg/L in January 2024 to 0.1 µg/L in December 2024), but in the same order of magnitude as previous wet season sampling results. This location will continue to be monitored as part of the OMP and FFTA1 post remediation ongoing monitoring (Coffey, 2022).
- Adjacent to Rapid Creek from SW104 (upstream of the Wier on Rapid Creek) and SW114 (DIA drain near the Dogs Home facility), with PFOS+PFHxS concentrations of 2.78 and 3.74 µg/L respectively reported in the March 2024 sampling event. SW104 is located only 120 metres northwest of SW114. These results were one- to two-orders of magnitude above those reported at the start of wet season (December 2023) with 0.44 µg/L reported at SW104 and below LOR from SW114. These concentrations, including the fluctuation between start and end wet season results, are consistent with historical results.
- Ludmilla Greek (SW125), located west of the base with PFOS+PFHxS concentration of 3.74 µg/L in the end of wet season (March 2024) sampling event. This is consistent with previous sampling events. The start of wet season sampling event (December 2023) reported the lowest PFAS concentrations to date, with PFOS+PFHxS reported at 1.24 µg/L, below the health-based criteria of 2 µg/L for the first time in the OMP program.

All other results were below the health-based criteria for the reporting period. The overall surface water concentrations remained consistent with previous assessments.

8.5 SURFACE WATER TRENDS

Surface water analytical results are presented in Table C4, Appendix C. Temporal graphs for PFOS+PFHxS and PFOA concentrations in surface water are included in Appendix D. The surface water locations have been grouped into the following areas as set out in Table 8-7 below.

Table 8-7: Summary of surface water location areas

Area	Surface water monitoring locations	Temporal graph reference (Appendix D)
Rapid Creek (freshwater)	SW101 (and alternate SW152), SW104, SW106, SW108, SW109	Graph D11 and Graph D12
Rapid Creek (estuarine water)	SW112, SW113	Graph D13 and Graph D14
Rapid Creek catchment (surface drains)	SW114, SW115, SW168, SW300	Graph D15 and Graph D16
Rapid Creek catchment (source areas)	SW156, SW170, SW178, SW181, SW132	Graph D17 and Graph D18
Ludmilla Creek catchment	SW120, SW124, SW125, SW160	Graph D19 and Graph D20

Area	Surface water monitoring locations	Temporal graph reference (Appendix D)
Reichardt and Sadgroves Creek catchments	SW132, SW133, SW143, SW162	Graph D21 and Graph D22

8.5.1 Rapid Creek freshwater

Five surface water monitoring locations in the OMP are positioned between the upper reach of Rapid Creek, adjacent to the end of the eastern runway and McMillans Road. These locations are:

- SW101 (and alternate SW152) – end of the eastern runway.
- SW104 – north of the eastern end of Larkin Avenue.
- SW106 – at the bottom of the constructed rapid/weir northeast of Sir Norman Brearley Drive.
- SW108 – west of where Henry Wrigley Drive crosses over Rapid Creek.
- SW109 – south of McMillans Road and east of Charles Eaton Drive.

Surface water concentrations for this area presented graphically in Graph D11 and Graph D12, Appendix D.

All Rapid Creek freshwater monitoring locations detected PFAS in all sampling events in this reporting period. The majority of results were consistent with historical concentrations. As discussed in Section 8.4, SW104 reported PFOS+PFHxS above the health-based recreational guideline, consistent with the sampling event in March 2023. Exceedance of the guideline has only been recorded in April 2020, March 2023 and March 2024 events, with the concentrations in these months consistent with one-another. Most of the concentrations are lower during the end-of-dry season sampling.

Alternate location SW152 was sampled in lieu of SW101 in this reporting period (as detailed in Section 3.3). SW101 has not been sampled since April 2021 due to inaccessibility.

PFAS concentrations fluctuated across the wet season with higher concentrations at the end of the wet season suggesting PFAS is mobilised from on-base (and other potential DIA) sources by rainfall as the wet season progresses.

Remedial activities completed in 2023 (FFTA1 and the former Wrapped Stockpile Area), and those planned in 2024 / 2025 (CFTA) are anticipated to reduce the long-term mass flux from the base into Rapid Creek.

8.5.2 Rapid Creek estuarine water

Two surface water monitoring locations are located in the lower reach of Rapid Creek within estuarine waters, including:

- SW112 – located within the Rapid Creek mangrove forest, east of Rapid Creek Road.
- SW113 – located east of the Rapid Creek foot bridge, north of Casuarina Drive.

Surface water concentrations for these locations are presented graphically in Graph D13 and Graph D14, Appendix D.

Both Rapid Creek estuarine water monitoring locations reported PFAS above LOR in all sampling events in the reporting period. Both locations exceeded the ecological guideline level for PFOS in all sampling events in the reporting period but did not exceed the relevant guidelines for PFOA and PFOS+PFHxS. These wells are sampled biannually (start and end of wet season). Results were consistent with historical concentrations with higher concentrations (by an approximate order of magnitude) reported in the end of wet season compared to start of wet season. The concentrations in the estuarine water continue to be lower than those in Rapid Creek

fresh waters, as noted in the previous interpretive report, (AECOM, 2023b). This reduced concentration is likely due to mixing of freshwater and saltwater within the estuarine zone.

8.5.3 Rapid Creek catchment surface drains

Three surface water locations monitor stormwater runoff from the base and DIA via surface drainage features to Rapid Creek, namely:

- SW114 – within a north flowing drain on the north side of the eastern portion of Larkin Avenue.
- SW115 – within a north flowing drain on the north side of the western portion of Larkin Avenue.
- SW168 – within a drain that flows under Charles Eaton Drive, between Murphy Drive and Charles Eaton Drive.
- SW300 – at a drain from the bushland area to the north of FFTA2 and the CFTA.

Surface water concentrations for these locations are presented graphically in Graph D15 and Graph D16, Appendix D.

Except for SW115 (north flowing drain on western portion of Larkin Avenue), all other sampling locations reported PFAS concentrations above LOR. These locations with concentrations above LOR all exceeded the ecological guideline level for PFOS. Location SW114 also exceeded the human health recreational guideline level for PFOS+PFHxS. These results are consistent with historical concentrations.

SW115 has reported concentrations below laboratory LOR since the start of wet season 2022 (November 2022). Prior to November 2022, PFOS+PFHxS concentrations at this location ranged from <0.01 µg/L (in December 2020 only) and 1.59 µg/L (January 2020). PFOA concentrations have consistently been below LOR except for two detects in December 2023 (at LOR, 0.01 µg/L) and March 2022 (0.03 µg/L). These minor detections could be due to laboratory variability given they are only marginally above the LOR. The cause of the reduction in PFAS at SW115 is currently unknown. However, the new control tower works were completed (along with pavement upgrades) in the areas up-stream from SW115 at about the time that the PFAS concentrations reduced.

PFAS concentrations were higher at the end of wet season than the start of wet season. Other than SW115, PFAS concentrations at these locations were also higher than the receiving Rapid Creek freshwater locations, likely due to dilution effects in Rapid Creek waters.

8.5.4 Rapid Creek catchment on-base source areas

Five surface water locations monitor stormwater runoff directly from key source areas, namely:

- SW156 – adjacent to CFTA
- SW170 – north of FFTA1, in main southern drain discharging to Rapid Creek
- SW312 – from FFTA1
- SW178 – at FFF5
- SW181 – north of FFF4

Surface water concentrations for this area are presented graphically in Graph D17 and Graph D18, Appendix D.

With the exception of SW178 (at FFF5) in the start of wet season sampling event (December 2023), all other locations reported PFAS concentrations above LOR in both sampling events in this reporting period. These locations with concentrations above LOR all exceeded the ecological guideline level for PFOS. SW312 also

exceeded the human health recreational guideline level for PFOS+PFHxS at the end of wet season sampling event (March 2024).

Surface water sample SW312 (at the drain leading from FFTA1) reported PFOS+PFHxS at a concentration an order of magnitude above recent results in the end of wet season sampling event (March 2024).

PFOA was also reported above LOR (0.03 µg/L) in the same sampling event. This is discussed in more detail in Section 8.4 above. Remediation of FFTA1 was completed in late 2023. Ongoing monitoring of SW312 as part of the OMP program and the post-remediation efficacy sampling (Coffey, 2022) will provide further information to assess the effects of remediation on surface water quality in this area.

All other results were consistent with historical concentrations. Most of the PFAS concentrations at these locations fluctuated with no consistent seasonality, indicating PFAS concentrations in surface water adjacent to on-base source areas continue to be variable.

8.5.5 Ludmilla Creek catchment

Four surface water locations are positioned in Ludmilla Creek, namely:

- SW120 – east side where Ludmilla Creek flows under Dick Ward Drive
- SW124 – Ludmilla Boat Ramp, where Ludmilla Creek enters Darwin Harbour at the end of Colivas Road
- SW125 – drain outlet that empties out from beneath the west side of the south end of Nemarluk Drive
- SW160 – On-base, at a stormwater pipe connected to airside operations, upgradient from the Ludmilla Creek catchment

Surface water concentrations for this area are presented graphically in Graph D19 and Graph D20, Appendix D.

With the exception of SW124 (located at Ludmilla Boat Ramp) in the start of wet season sampling event (December 2023), all locations reported PFAS concentrations above LOR in both sampling events in this reporting period. These locations with concentrations above LOR all exceeded the ecological guideline level for PFOS. Location SW125 also exceeded the human health recreational guideline level for PFOS+PFHxS at the end of wet season sampling event (March 2024). Concentrations below the LOR at SW124 at the start of the wet season are consistent with historical results.

The highest concentration was reported at SW125 (drain outlet at the end of Nemarluk Drive), however, as noted in Section 8.4 these results are consistent with historical results and are lower than the historical maximum of 10.2 µg/L (March 2018).

Seasonal variations have been observed for PFOS+PFHxS in SW120 and SW124 with higher concentrations within wet season (refer Graph D20, Appendix D).

8.5.6 Reichardt and Sadgroves Creek catchments

Four surface water locations monitor the Reichardt and Sadgroves Creek catchments, namely:

- SW132 and SW133 – surface water discharging to Reichardt Creek
- SW143 – surface water discharging to Sadgroves Creek
- SW162 – stormwater leaving the base's southern boundary

Surface water concentrations for this area are presented graphically in Graph D21 and Graph D22, Appendix D.

All locations reported PFAS concentrations above the LOR in both sampling events during this reporting period and exceeding the ecological guideline level for PFOS. All locations were below the human health

recreational guidelines for PFOS+PFHxS. Concentrations reported were consistent (within the same order of magnitude) as historical results with no apparent seasonal variability.

8.6 AQUATIC BIOTA

A summary of aquatic biota concentrations reported within this reporting period is presented in Table 8-8 below. Tabulated analytical results of all current and historical sampling is presented in Table C5, Appendix C. Monitoring activities are summarised in the factual reports provided in Appendix B.

Concentrations of PFOA in all sampled crustaceans were below the adopted screening criteria (10 mg/kg) for aquatic biota during the reporting period. No screening criteria exists for PFOA for fish. Concentrations of PFOA exceeded the LOR in:

- One fish sample from BIO007 at Rapid Creek mouth (0.00015 mg/kg)
- Three invertebrate samples from BIO016 at Ludmilla Creek estuarine area (0.004 – 0.009 mg/kg)
- Three crustacean samples, one from each of BIO018 from Ludmilla Creek boat ramp, and BIO024 and BIO028, both from Rapid Creek freshwater (0.001 mg/kg)

Concentrations of PFOS and PFOS+PFHxS exceeded the adopted screening criteria for aquatic biota of 0.065 mg/kg for crustaceans at the following monitoring locations:

- BIO024 (Rapid Creek Freshwater)
  - One Redclaw Crayfish (Cherux quadricarinatus) – 0.074 mg/kg (crustaceans 0.065 mg/kg)
- BIO026 (Rapid Creek Freshwater)
  - One Cherabin (Macrobrachium spinipes) – 0.42 mg/kg (crustaceans 0.065 mg/kg)
- BIO028 (Rapid Creek Freshwater)
  - One Redclaw Crayfish (Cherux quadricarinatus) – 0.078 mg/kg (crustaceans 0.065 mg/kg)

In addition, the following locations exceeded the 0.0052 mg/kg for finfish for PFOS+PFHxS:

- BIO007 (Rapid Creek mouth)
  - Six Forktail Catfish 1 (Neoarius sp.1)
  - Two Forktail Catfish 2 (Neoarius sp.2)
  - One Banded Archerfish (Toxotes jaculatrix)
  - One Milkfish (Chanos chanos)
  - One Tarpon (Megalops cyprinoides)
- BIO018 (Ludmilla Creek boat ramp)
  - One Queenfish (Scomberoides commersonnianus)
  - One Forktail Catfish 1 (Neoarius sp.1)

Of the 60 aquatic biota samples analysed during this reporting period, 17 analysed samples had concentrations above the screening criteria, accounting for almost 30% of all analysed samples. This is an increase from the 10% reported in the previous interpretive report (AECOM, 2023a).

Sample locations BIO024 and BIO026, both located within Rapid Creek, reported new exceedances of the screening criteria for Redclaw Crayfish (Cherux quadricarinatus) in October 2023. At BIO026 the exceedance (0.42 mg/kg of PFOS+PFHxS in Cherabin (Macrobrachium spinipes)) was an order of magnitude above previous results from the same location. However, it is noted this is the first time this crustacean species has been sampled.

The sample from BIO024 which reported a new exceedance was a Redclaw Crayfish (Cherux quadricarinatus), which was within the same order of magnitude as pervious results but exceeded the crustacean guideline for the first time at that location.

The risks associated with consuming aquatic biota remain similar to conditions described in the HHRA (Coffey, 2018c). Sampling of aquatic biota is primarily to inform NT Department of Health to keep health advisories up to date.

The bioaccumulation of PFAS in aquatic biota will continue to be monitored through the OMP sampling.

Table 8-8: Biota monitoring PFAS summary results (mg/kg)

Target Species	Analyte	Historical range (mg/kg)	OMP monitoring (October 2023) (mg/kg)
BIO024 / BIO026 / BIO028			
Crustaceans	PFOS+PFHxS	<0.001 – 0.139	0.015 – 0.37
	PFOS	<0.0003 – 0.115	0.02 – 0.42
	PFOA	<0.0001 – 0.002	<0.0001 – 0.01
BIO016			
Molluscs	PFOS+PFHxS	<0.001 – 0.118	0.008 – 0.018
	PFOS	<0.0003 – 0.065	0.008 – 0.018
	PFOA	<0.0001 – 0.018	<0.0001 – 0.009
BIO007			
Diadromous or estuarine fish[1]	PFOS+PFHxS	<0.001 – 0.5	<0.001 – 0.084
	PFOS	<0.0003 – 0.036	<0.0003 – 0.084
	PFOA	<0.0001	<0.0001 – 0.00015
BIO018			
Diadromous or estuarine fish[1]	PFOS+PFHxS	<0.001 – 0.048	<0.001 – 0.011
	PFOS	<0.0003 – 0.047	<0.0003 – 0.011
	PFOA	<0.0001 – 0.001	<0.0001 – 0.001

Notes:

1. All samples (primary and duplicates)
2. As ecological criteria is below laboratory LOR, only samples above the LOR have been included.

9. CONCEPTUAL SITE MODEL

The CSM was developed during the DSI (Coffey, 2018a), summarised in the PMAP (Defence, 2019a) and has been recently updated in in the following subsequent reports:

- Tetra Tech Coffey, RAAF Base Darwin – PFAS Investigation, Balance of Base PFAS Remediation Action Plan, December 2023 (Tetra Tech Coffey, 2023)
- RAAF Base Darwin – PFAS Remediation, FFTA1 and Wrapped Stockpile Validation Report, July 2024 (Tetra Tech Coffey, 2024a)
- Tetra Tech Coffey, RAAF Darwin PFAS Management Project, Site Review Assessment Report, March 2024 (Tetra Tech Coffey, 2024b).

9.1 CONCEPTUAL SITE MODEL REVIEW

The groundwater, surface water and biota results from this reporting period have been used to review the CSM, with the following key findings included in the review:

- Most of the PFAS concentrations in groundwater, surface water and biota were within or below historical ranges.
- PFAS concentrations in groundwater at FFTA1 were one to two orders of magnitude lower in this monitoring period. Further sampling is required to assess changes in down gradient groundwater and downstream surface water PFAS concentrations.
- Mann-Kendall statistical trend analysis of groundwater data showed the following:
    - More trends were reported to be decreasing than in the previous interpretive report (AECOM, 2023b) indicating an overall reduction in PFAS movement from the base. Further PFAS movement monitoring and assessment is being undertaken at the base and will confirm this.
    - Increasing trends were reported in MW215 and MW125 within and down-hydraulic gradient of FFF1. Additional investigations are currently being undertaken at this source area to assess what further works (if any) are required to reduce PFAS movement related to this area.
- Concentrations of PFAS in groundwater remain highest at PFAS source areas, with the following source areas reporting the highest PFAS concentrations within the Management Area:
    - Former ARFF Fire Station (MW115)
    - FFF4 and FFF6 (MW133 and MW303)
    - CFTA (MW240 and MW241)

    All source areas listed above have PMAP management actions assigned, including some with active remediation actions, to be undertaken throughout 2024 and 2025.
- PFAS concentrations in groundwater were lower outside of PFAS source areas, consistent with previous results.

Whilst there has been some reduction in PFAS concentrations reported during this reporting period, and a greater number of decreasing trends overall, the data presented in this report does not change the overall assessment of CSM sources, pathways and/or risks to receptors as described in the updated CSM below.

9.2 UPDATED CONCEPTUAL SITE MODEL

9.2.1 Sources of PFAS

AFFF was used by Defence on-base (and on DIA-occupied land at FFTA2) for fire suppression activities, including testing and training in fire training areas and fire stations, and in fire suppression systems associated with fuel storage systems.

The use of AFFF at the base commenced shortly after World War II with natural protein foams (derived from animal products) used. In the late 1960s, synthetic AFFF was developed (such as the PFAS containing 3M Lightwater™) and use of synthetic AFFF products commenced at the base in 1983. The 3M Lightwater™ product was used until the early 2000s and was completely removed from the base in 2009 in preference for Ansulite for fire training activities, hangar and fuel farm fire suppression system operation and testing, incident response and response equipment testing. Ansulite continues to be the main AFFF product available on base for emergency responses (i.e., fuel and aircraft fire extinguishment).

The 3M Lightwater™ products contained various PFAS compounds including PFOS, PFHxS and lesser amounts of PFOA, as well as other minor PFAS compounds. The Ansulite product contains limited PFOS, PFHxS or PFOA as active ingredients, but does include short-chain PFAS compounds and fluorotelomers, some of which may degrade to PFOS, PFHxS or PFOA.

A summary of the primary source areas, as outlined in the PMAP (Defence, 2019a) is included in Table 9-1 below. The location of these sources is shown in Figure 1, Appendix A.

Table 9-1: PFAS Source Areas

PFAS source area	Comments
Former Fire Training Area 1 (FFTA1)	AFFF training activities PFAS identified, and remediation completed in 2023 Currently in post-remediation monitoring phase
Former Fuel Farm 5 (FFF5)	AFFF fire suppression system testing Discharge due to incident reported Low priority source area due to limited PFAS mass and limited contribution to PFAS moving from the Base
Former Fuel Farm 4 (FFF4)	AFFF fire suppression system testing Discharge due to incident reported PFAS identified – planned for remediation 2024 to 2025
Former Fuel Farm 6 (FFF6)	AFFF fire suppression system testing. No reported spills of AFFF PFAS identified – planned for further assessment and remediation 2024 to 2025
Stockpiled AFFF Contaminated Soils (also referred to as *Wrapped Stockpile Area*)	Stockpiles of soils from remediation works conducted at Hangar 31 in 2008 from AFFF release incident Stockpiles were remediated and retained in FFTA1 area in 2023 Minor concentrations of PFAS remain in soils, no further actions
Former ARFF Fire Station	AFFF training, testing and storage. Former location beneath current ordnance loading area (OLA) PFAS delineation in soils and groundwater planned for 2024 to 2025
Hangar 31	AFFF release incident Surface soil remediation occurred 2008 Remaining mass and mass flux being investigated
Former Fuel Farm 1 (FFF1)	AFFF fire suppression system testing Discharge due to incident reported

PFAS source area	Comments
	Majority of fuel farm soils (including PFAS) removed during base upgrade works between 2020 to 2022
Former RAAF Fire Station	AFFF training, testing and storage PFAS identified in soils, and groundwater and contributes to off base movement of PFAS Further assessment being undertaken in 2024 to 2025
Current Fire Training Area (CFTA)	AFFF training activities PFAS identified in soils and groundwater Planned for remediation 2024 to 2025
Former Fire Training Area 2 (FFTA2)	Located on DIA-occupied land AFFF training activities, including use by RAAF Remediation assessment design planned for 2024

Secondary sources of PFAS at the base include:

- PFAS adhered/adsorbed to soils in the vadose zone (unsaturated soils above the groundwater table), leaching to groundwater or surface water with seasonal fluctuations in groundwater levels.
- PFAS in sediments along Rapid or Ludmilla Creeks, drainage lines and surface soils across the base leaching or moving during the wet season.

9.2.2 Pathways for PFAS migration

Potential pathways for the migration of PFAS include the following:

- Leaching and migration from impacted into groundwater or surface water.
- Lateral migration of PFAS in groundwater with the flow of the aquifer.
- Potential extraction of groundwater for irrigation use.
- Discharge of groundwater into surface waters and associated sediments. This includes discharge of groundwater into unlined and lined stormwater drains.
- Surface water runoff from PFAS sources to site drains, depressions, open pits and surrounding creeks.
- Migration of PFAS in surface water (site drains and surrounding creeks) to down-stream areas.
- Infiltration of PFAS impacted surface water into soil and groundwater.
- Uptake of PFAS from sediment, groundwater, and surface water by biota.

The primary pathways for PFAS migration from source to receptors at the base is via groundwater and surface water. The majority of the mass migration is via groundwater, however there are two separate groundwater migration mechanisms including:

Perched flow – Which is where groundwater levels rise during the wet season into the shallow (approx. 1 to 2 m deep) highly permeable[3] lateritic soils and migrate horizontally as ‘perched groundwater’. Heavy rainfall also infiltrates rapidly into the shallow laterite and increases ‘perched’ groundwater flow. Where surface drainage channels are cut into the laterite, the ‘perched’ groundwater discharges into the drainage channels, prior to flowing into surrounding creeks.

Groundwater flow – This is where groundwater flows year-round within the siltstone aquifer (beneath the laterite). The majority of the siltstone is low permeability some areas (such as within white claystone areas of

[3] Permeability refers to how easily water flows through soils or rock. Water does not flow very fast through low-permeability units (e.g. clays or solid rock) but does flow very fast through high-permeability units such as gravels, laterite or open rock-fractures.

the siltstone aquifer) having permeabilities several orders of magnitude higher. The perched flow can result in very high flow velocities and is the primary pathway for PFAS migration from several source areas. The groundwater flow, whilst slower, does transport PFAS from source areas to surface water bodies (i.e. Rapid Creek) where it emerges year-round (Coffey, 2018a, Coffey, 2022d).

Surface water – Surface water PFAS migration occurs across the Base, although the mass of PFAS moving from source areas within the surface water pathway is not as high as the via the perched and groundwater flow.

Sediment transport along drainage lines was investigated during the DSI and later investigations and was considered to result in practically no PFAS movement at the base. This is because most drains are dry through the dry season, and only flow after heavy rainfall in the wet season. The on-base drains also have sediments removed each year.

9.2.3 Receptors

Receptors of PFAS at and off the base were identified in the HHRA (Coffey, 2018c) and the ERA (Coffey, 2018b) and are summarised in Table 9-2 below.

Table 9-2: PFAS Receptors on- and off-Base

Human Receptors	Ecological receptors
• Site personnel • On-base maintenance workers conducting sub-surface works or working on wastewater infrastructure • On-base construction workers conducting excavation works • On-base residents of RAAF Base Darwin • Off-base commercial and industrial workers in areas surrounding the Base • Off-base maintenance workers conducting sub-surface works in areas surrounding the base and affected catchments • Off-base construction workers conducting excavation works in areas surrounding the base and affected catchments • Off-base residents primarily those surrounding the base and affected catchments • Recreational users, undertaking activities such as swimming and fishing, within Rapid Creek, Ludmilla Creek, Sadgroves Creek and Reichardt Creek Potential users of extracted groundwater down-gradient of source areas	• Terrestrial flora and fauna - including plants, trees, birds, reptiles, mammals, insects and invertebrates. • Aquatic flora and fauna

10. RISK PROFILE REVIEW

The data collected during this OMP reporting period (June 2023 to April 2024), when combined with the historical monitoring conducted at the base to date, suggest that the risk profile to human health and ecological receptors within the PFAS Management Area is overall unchanged since the publication of the HHRA (Coffey, 2018c). This is discussed further in the sections below.

10.1 GROUNDWATER

10.1.1 Nature and extent of groundwater PFAS impacts

PFAS concentrations in groundwater at the FFTA1 source area have reduced by one to two orders of magnitude following the completion of remediation at this source area. It is noted however, that this is based on one sampling event, and further sampling is required to confirm these concentrations.

Consistent with what was reported in the previous interpretive report (AECOM, 2023a), other than FFTA1 (which no longer reported the highest concentrations in the recent sampling events), the highest concentrations reported were at key PFAS source areas:

- FFF4 and FFF6
- Former ARFF Fire Station
- CFTA

Groundwater concentrations of PFAS in wells away from the source areas were typically one to two orders of magnitude lower than those reported in these key PFAS source areas.

10.1.2 Areas of groundwater PFAS concentration change

A summary of changes in Mann-Kendall trend analysis between this OMR and the previous interpretive report (AECOM, 2023a) is presented in Table 10-1 below. Green shading represents a reducing trend (e.g. from *increasing trend* to *decreasing*, *stable,* or *no trend*), and orange shading represents the trend has changed from a *decreasing* trend to a *stable* trend, or to an *increasing* trend when it wasn't previously.

Three groundwater wells (MW215 and MW125) reported trends changing to *increasing*. Further monitoring would be required to confirm the concentration changes in this area. As mentioned in Section 9, additional investigation works are underway in this source area currently.

Table 10-1: Summary of changes in Mann-Kendall trend analysis

Location	Monitoring Well	Analyte	Mann-Kendall trend in previous interpretive report	Mann-Kendall trend in this OMR[2]
West				
Former RAAF Fire Station	MW103	PFOA	Increasing	Stable
		PFOS+PFHxS	Increasing	Stable
Between Former RAAF Fire Station and FFF1 source areas	MW107	PFOA	Stable	Decreasing
		PFOS+PFHxS	Stable	Decreasing
FFF1	MW215	PFOA	Stable	Increasing
		PFOS+PFHxS	Stable	Increasing
Down hydraulic gradient of RAAF Fire Station and FFF1	MW125	PFOA	Stable	Increasing
		PFOS+PFHxS	Decreasing	Stable
	MW148	PFOA	Decreasing	Decreasing
		PFOS+PFHxS	Stable	Decreasing
South of the base				
Winnellie	MW200	PFOA	Stable	Stable
		PFOS+PFHxS	Stable	Decreasing
The Narrows	MW209	PFOA	No trend	No trend
		PFOS+PFHxS	Stable	Decreasing
North				
Adjacent to Rapid Creek	MW156	PFOA	Decreasing	Stable
		PFOS+PFHxS	Decreasing	Stable
	MW190	PFOA	Stable	Stable
		PFOS+PFHxS	Stable	Decreasing
	MW194	PFOA	Stable	Stable
		PFOS+PFHxS	Stable	Decreasing
Adjacent to CFTA	MW240	PFOA	Stable	Stable
		PFOS+PFHxS	Stable	No Trend

Notes:

1. Green shading indicates that the trend has changed from and *increasing* trend to a *decreasing, stable,* or *no* trend. Orange shading indicates that the trend has changed from a *decreasing* to *stable* trend or *stable* trend to an *increasing* trend compared with previous trend-analysis results.

10.2 SURFACE WATER

10.2.1 Nature and extent of groundwater PFAS impacts

Concentrations of PFAS remained within historical ranges reported throughout the Management Area, and most conditions within the Management Area are unchanged from the findings of the HHRA (Coffey, 2018c).

All concentrations were below health-based (recreational) guidelines except for the following locations, all collected from the March 2024 (end of wet season) monitoring event:

- SW312 – Located in a drain leading from FFTA1 towards Rapid Creek
- SW104 – Rapid Creek freshwater, located at the north of the eastern end of Larkin Avenue
- SW114 – Located within a north flowing DIA drain on the north side of the eastern portion of Larkin Avenue
- SW125 – Located in the Ludmilla Creek catchment, in a drain outlet that empties out from beneath the west side of the south end of Nemarluk Drive.

All the above have historically been above the health-based (recreational) guidelines and therefore the risk profile remains unchanged.

10.2.2 Areas of surface water PFAS concentration change

The drainage line leading from FFTA1 reported (in March 2024) a PFOS+PFHxS concentration of 3.67 µg/L. This is one to two-orders of magnitude above the concentrations reported in the preceding monitoring events (0.029 – 0.04 µg/L in January 2024 to 0.1 µg/L in December 2024), but in the same order of magnitude as previous wet season sampling results. This location will continue to be monitored as part of the OMP and FFTA1 post remediation ongoing monitoring (Coffey, 2022).

All other results were consistent with historical results.

10.3 AQUATIC BIOTA

10.3.1 PFAS impacts

60 biota samples were analysed for PFAS in the October 2023 sampling event. Concentrations of PFOA and PFOS+PFHxS in aquatic biota sampled in October 2023 exceeded the adopted screening criteria for finfish (2-6 years) in approximately 30% of samples. This is an increase from 10% from the last interpretive report (AECOM, 2024). Only 5% exceeded the adopted screening criteria for crustaceans (2-6 years).

Sample locations within Rapid Creek freshwaters, reported two new exceedances of the screening criteria crustaceans in the October 2023. At one location, the exceedance was an order of magnitude above previous results from the same location. However, it is noted this is the first-time that the crustacean species Cherabin (Macrobrachium spinipes) has been sampled. The other exceedance reported was also a Redclaw Crayfish (Cherux quadricarinatus), but within the same order of magnitude as previous results.

10.3.2 Risks

The risks associated with consuming aquatic biota are consistent with assumptions and concentrations adopted in the development of the HHRA (Coffey, 2018c). Sampling of aquatic biota is primarily to inform NT Department of Health to update health advisories associated with consumption of biota from Rapid and Ludmilla Creeks as required.

11. CONCLUSIONS

Groundwater, surface water and aquatic biota sampling was undertaken between August 2023 and April 2024. This OMR covers the reporting period from June 2023 as there was a scheduled surface water sampling event in that month, however this was not completed due to insufficient water present to sample.

The results for the reporting period indicate the nature and extent of PFAS in groundwater, surface water and aquatic biota are consistent with previous findings.

Fluctuations were observed and are likely due to seasonal variability of the wet and dry seasons. A decrease in groundwater concentrations at FFTA1 is also attributed to the remediation works completed in late 2023. An increasing trend was observed at FFF1 (i.e., MW215), however as the results remain within one order of magnitude of historical results, this indicates no significant changes occurred. Further investigation is being undertaken in this area in 2024.

The following source areas are the subject of planned remediation or management actions at the base scheduled to commence in 2024 and/or 2025:

- FFF4
- FFF6
- CFTA

The CSM was reviewed, and based on the results presented within this report, no changes are identified to sources (noting the removal of the bulk of the Wrapped Stockpile Area impacts), pathways or risks to receptors at the base and within the Management Area. Whilst remediation at FFTA1 was completed in 2023, post-remediation monitoring at FFTA1 is ongoing to assess the success of remediation.

The monitoring conducted over the reporting period is considered to have met the objectives of the SAQP and OMP. The PMAP and the OMP is currently under review, and a revised OMP and SAQP will be issued in 2024.

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APPENDIX A: FIGURES

Figure 1 **RAAF Base Darwin PFAS Management Area**

Figure 2 **Groundwater sampling locations**

Figure 3 **Surface water sampling locations**

Figure 4 **Biota sampling locations**

Figure 5A **Inferred groundwater flow direction – October / November 2023**

Figure 5B **Inferred groundwater flow direction – March 2024**

Figure 6A **Groundwater analytical results – PFOS+PFHxS**

Figure 6B **Groundwater analytical results – PFOA**

Figure 7A **Surface water analytical results – PFOS+PFHxS**

Figure 7B **Surface water analytical results – PFOA**

LEGEND

- Creek
- PFAS source area
- Managment area (On-base)
- Managment area

ID	Source Area
1	Former Fire Training Area 1 (FFTA1). *Also previously called Former Fire Training Ground 1*
2	Former Fuel Farm 5 (FFF5)
3	Former Fuel Farm 4 (FFF4)
4	Former Fuel Farm 6 (FFF6)
5	Wrapped Stockpiles Area *Also previously called the 'AFFF Contaminated Soil Stockpiles'*
6	Former Aviation Rescue Fire Fighting (ARFF) Fire Station
7	Hangar 31
8	Former Fuel Farm 1 (FFF1)
9	Former RAAF Fire Station (Former RAAF-FS)
10	Former Fire Training Area 2 (FFTA2)
11	Current (Hot) Fire Training Area (CFTA)

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

N

0 500 1,000 m

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PAGE SIZE: **A3**
PROJECTION: **GDA 1994 MGA Zone 52**

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RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 1

RAAF Base Darwin PFAS Management Area

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GW wells	Comment
MW112	Buried or destroyed
MW197	Dry at end of dry season (2023), unable to be sampled
MW235	Alternative well for MW422 - damaged, unable to be sampled during reporting period
MW240	Dry at end of dry season (2023), unable to be sampled
MW422	Dry at end of dry season (2023), decomissioned prior to wet seas (2024) sampling event
MW453	Dry at end of dry season (2023), unable to be sampled
MW502	Alternative well for MW422 (March 2024 only)

LEGEND

- Groundwater sampling location
- Not sampled end of dry season (2023)
- Not sampled end of wet season (2024)
- Stuart highway
- Creek
- PFAS source area
- Managment area
- Managment area (On-base)

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

0 250 500 m

SCALE **1:21,000**
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RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 2

Groundwater sampling locations

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LEGEND

- Surface water sampling location
- Stuart highway
- Creek
- Surface water catchment (indicative only)
- PFAS source area
- Managment area
- Managment area (On-base)

*Not sampled in June 2023
**Not sampled in March 2024 as was dry

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

0 500 1,000 m

SCALE **1:32,000**
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RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 3

Surface water sampling locations

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LEGEND

- Biota sampling location
- Stuart highway
- Creek
- PFAS source area
- Managment area (On-base)
- Managment area

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

N

0 500 1,000 m

SCALE **1:32,000**
PAGE SIZE: **A3**
PROJECTION: **GDA 1994 MGA Zone 52**

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FIGURE 4

Biota sampling locations

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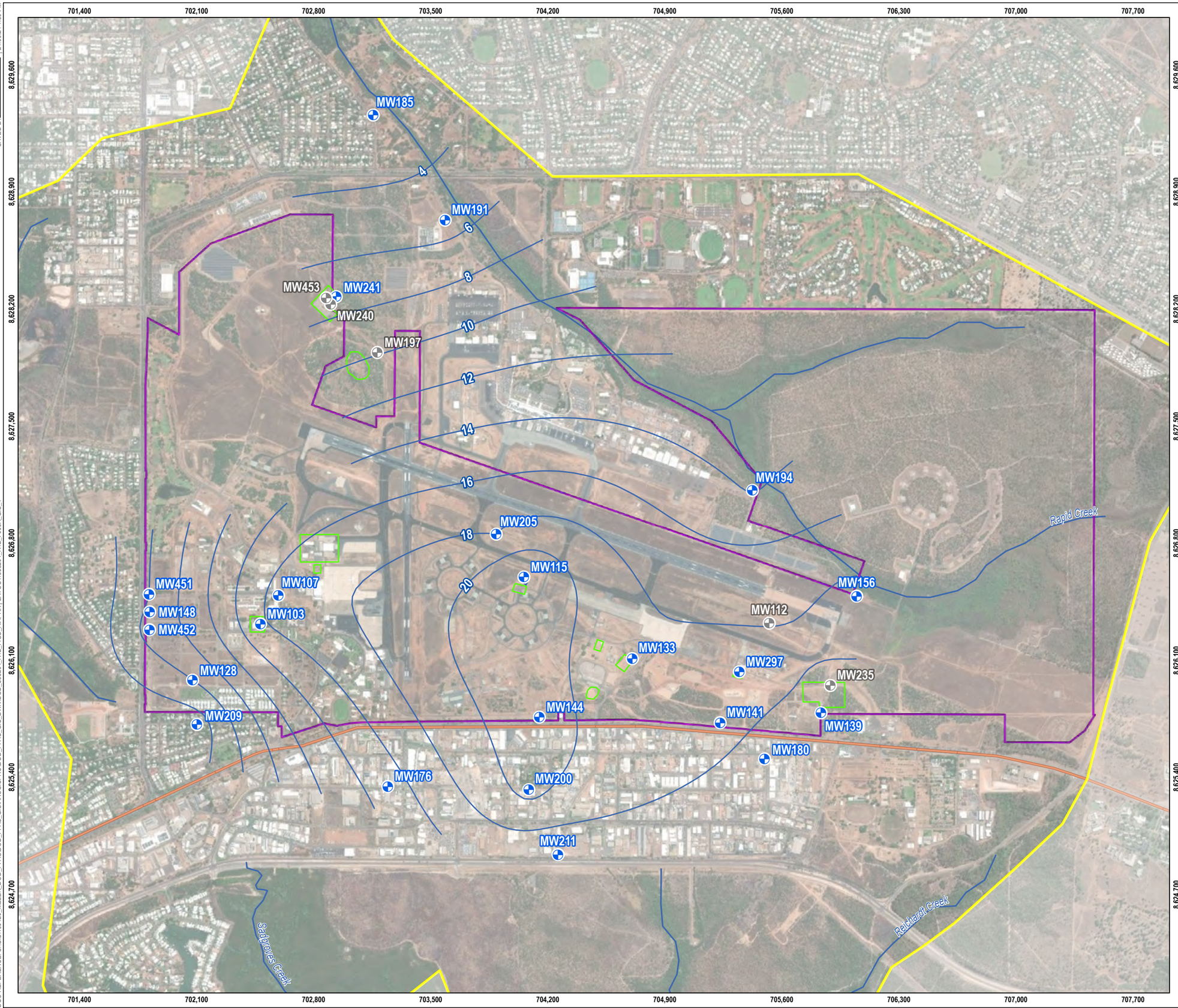

LEGEND

- Sampled groundwater location
- Not sampled groundwater location
- End of dry season groundwater contour (mAHD)
- Stuart highway
- Creek
- PFAS source area
- Managment area (On-base)
- Managment area

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

0 250 500 m

SCALE **1:22,000**
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RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 5A

Inferred groundwater flow direction October/November 2023

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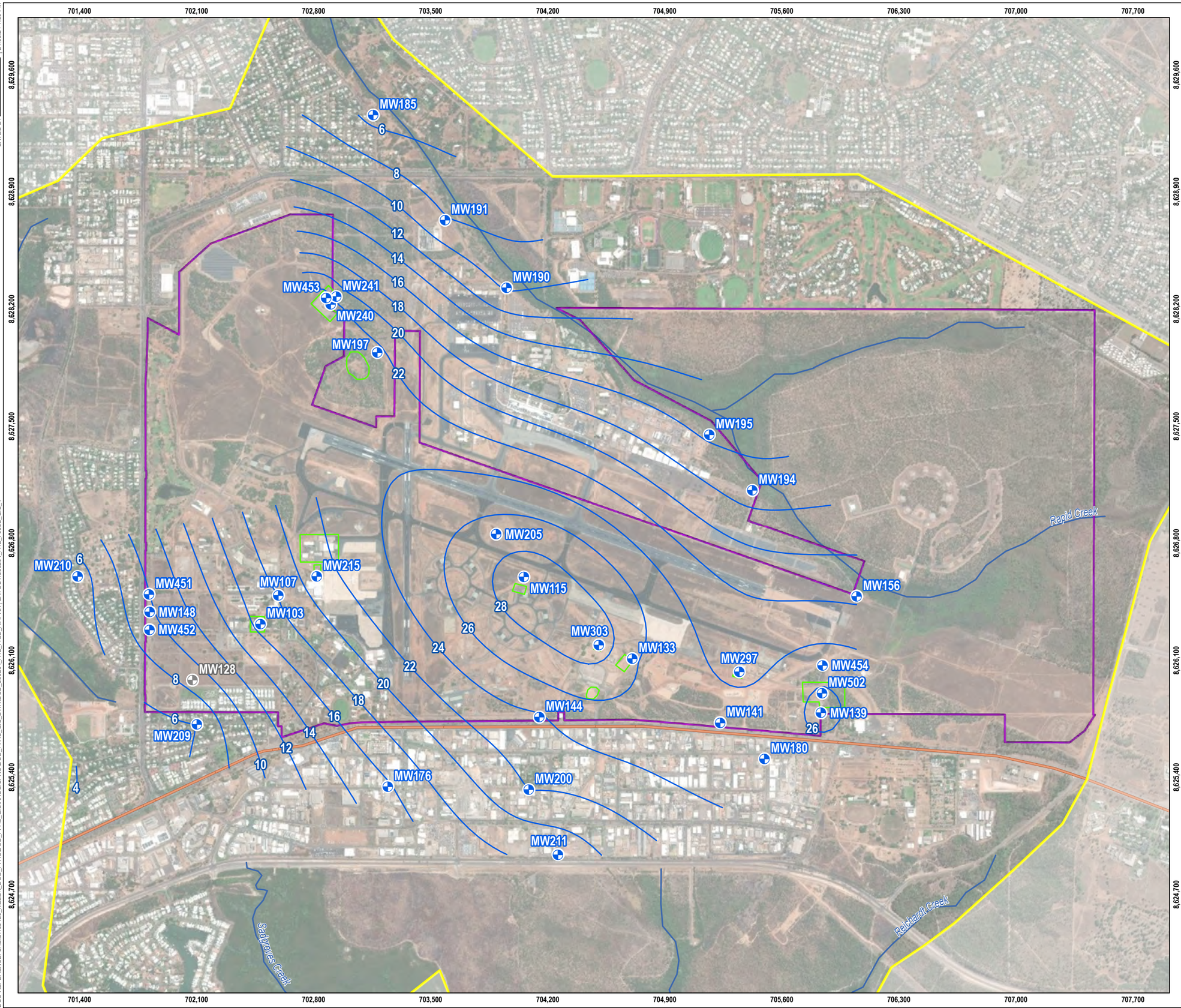

LEGEND

- Groundwater sampling location
- Groundwater sampling location (gauging data not available)
- End of wet season groundwater contour (mAHD)
- Stuart highway
- Creek
- PFAS source area
- Managment area (On-base)
- Managment area

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

0 250 500 m

SCALE **1:22,000**
PAGE SIZE: **A3**
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RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 5B

Inferred groundwater flow direction March 2024

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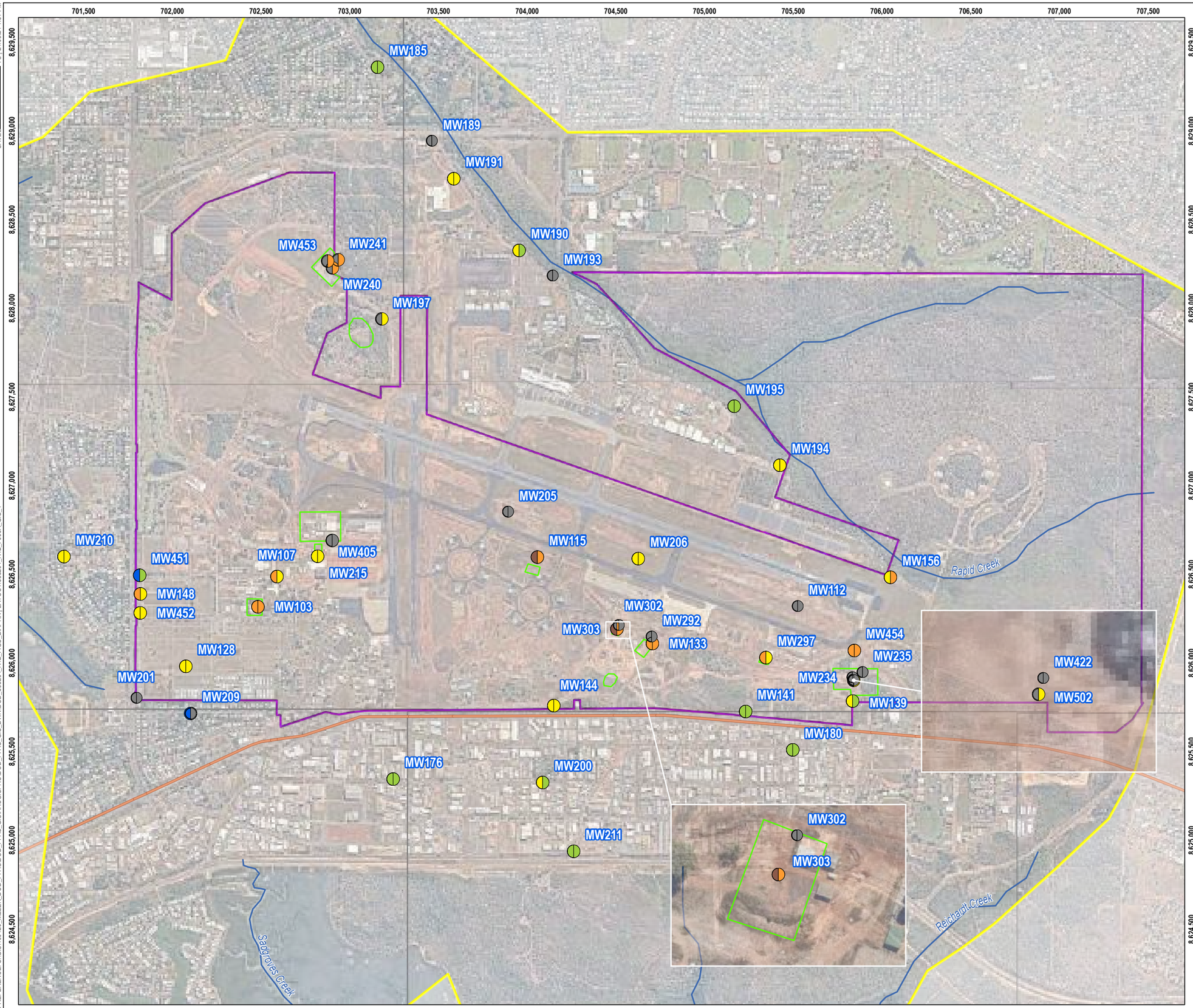

LEGEND

Sum of PFOS and PFHxS

- Below LOR
- LOR to 0.07 µg/L
- 0.07 to 0.7 µg/L
- 0.7 to 7 µg/L
- 7 to 70 µg/L
- >= 70 µg/L
- Not sampled
- Sampled in Dry season (2023)
- Sampled in Wet season (2024)

Road

- Stuart highway
- Creek
- PFAS source area
- Managment area (On-base)
- Managment area

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

N

0 250 500 m

SCALE **1:21,000**
PAGE SIZE: **A3**
PROJECTION: **GDA 1994 MGA Zone 52**

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RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 6A

Groundwater analytical results PFOS+PFHxS

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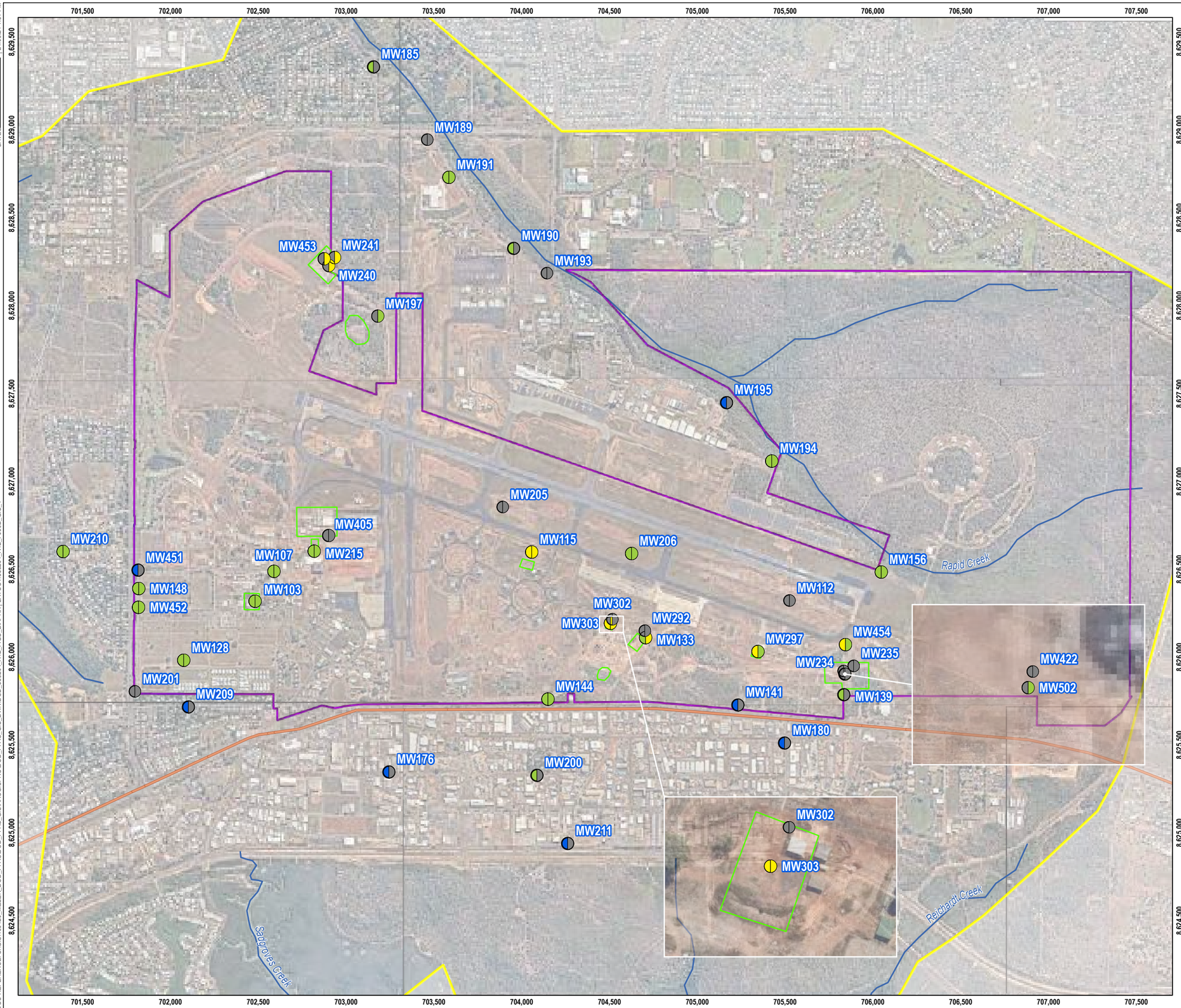

LEGEND

PFOA Concentration

- Below LOR
- LOR to 0.56 µg/L
- 0.56 to 5.6 µg/L
- 5.6 to 19 µg/L
- > 19 µg/L
- Not sampled
- Sampled in Wet season (2024)
- Sampled in Dry season (2023)
- Stuart highway
- Creek
- PFAS source area
- Managment area (On-base)
- Managment area

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

N

0 250 500 m

SCALE **1:21,000**
PAGE SIZE: **A3**
PROJECTION: **GDA 1994 MGA Zone 52**

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RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 6B

Groundwater analytical results PFOA

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699,000 700,000 701,000 702,000 703,000 704,000 705,000 706,000 707,000 708,000

8,632,000 8,631,000 8,630,000 8,629,000 8,628,000 8,627,000 8,626,000 8,625,000 8,624,000

SW113
SW112
Rapid Creek
SW109*
SW300
SW156**
SW168
SW108
SW106
Rapid Creek
SW115
SW104
SW114
Rapid Creek
SW101**
SW124
Ludmilla Creek
SW120
SW160
SW125
SW181
SW178
SW170
SW152
SW312
SW162
SW143
Sadgroves Creek
Reichardt Creek
SW133
SW132
Reichardt Creek

LEGEND

Sum of PFOS and PFHxS

- Below LOR
- LOR to 0.07 µg/L
- 0.07 to 0.7 µg/L
- 0.7 to 7 µg/L
- 7 to 70 µg/L
- >= 70 µg/L
- Not sampled
- Sampled in Start of wet season (2023)
- Sampled in End of wet season (2024)

Road
Stuart highway
Creek
PFAS source area
Managment area (On-base)
Managment area

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

N

0 500 1,000 m

SCALE **1:32,000**
PAGE SIZE: **A3**
PROJECTION: **GDA 1994 MGA Zone 52**

DEPARTMENT OF DEFENCE

RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 7A

Surface water analytical results PFOS+PFHxS

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DATE: **27.08.24** PROJECT: **754-MELEN338204** FILE: **338204_R12_F007A_GIS**

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LEGEND

PFOA Concentration

- Below LOR
- LOR to 0.56 µg/L
- 0.56 to 5.6 µg/L
- 5.6 to 19 µg/L
- > 19 µg/L
- Not sampled
- Sampled in Start of wet season (2023)
- Sampled in End of wet season (2024)
- Stuart highway
- Creek
- PFAS source area
- Managment area (On-base)
- Managment area

SOURCE
Inferred PFAS source areas from site history information.
RAAF Base Darwin site boundary, roads, tracks, and creeks from DoD.
Imagery from Nearmap (06-06-2021).

0 500 1,000 m

SCALE **1:32,000**
PAGE SIZE: **A3**
PROJECTION: **GDA 1994 MGA Zone 52**

DEPARTMENT OF DEFENCE

RAAF BASE DARWIN -ONGOING MONITORING REPORT (JUNE 2023 – APRIL 2024)

FIGURE 7B

Surface water analytical results PFOA

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APPENDIX B: SAQP AND FACTUAL REPORTS

Prepared for
Department of Defence, Directorate of PFAS Remediation, Environment and Engineering Branch
ABN: 68 706 814 312

AECOM

Sampling Analysis and Quality Plan

RAAF Base Darwin

06-Oct-2023
PFAS OMP - RAAF Darwin
Doc No. 60612561_OMP_RAAF Darwin_SAQP_Rev3_20230804

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Delivering a better world

Sampling Analysis and Quality Plan

RAAF Base Darwin

Client: Department of Defence,
Directorate of PFAS Remediation,
Environment and Engineering Branch

ABN: 68 706 814 312

Prepared by

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06-Oct-2023

Job No.: 60612561

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 and ISO45001.

Quality Information

Document Sampling Analysis and Quality Plan

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Date 06-Oct-2023

Prepared by [redacted]

Reviewed by [redacted]

Revision History

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			Name/Position	Signature
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2	16-Jan-2023	Revised Final Version 2		
3	6-Oct-2023	Revised Final Version 3		[redacted]

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1.0 Introduction

1.1 Preamble

In July 2019 AECOM Australia Pty Ltd (AECOM) was engaged by the Department of Defence (Defence) to implement routine monitoring programs for per- and poly-fluoroalkyl substances (PFAS) over a three-year period at selected Defence sites within the following four Defence regions:

- New South Wales and Jervis Bay Territories (excluding Riverina) Region (NSW & ACT)
- North Queensland Region (North QLD)
- South Queensland Region (South QLD)
- South Australia and Northern Territory Region (SA & NT).

This Sampling Analysis and Quality Plan (SAQP) has been prepared in relation to the proposed Ongoing Monitoring Plan (OMP) (Coffey, 2019a) works at the RAAF Base Darwin (the Base) (**Figure 1, Appendix B**) in the **SA & NT Region**. RAAF Base Darwin is located approximately seven kilometres from the Darwin central business district in the NT.

1.2 SAQP objectives

The objectives of this SAQP are to:

- define the proposed scope of works in detail.
- outline the proposed sampling methodology and procedures to be adopted.
- outline the proposed quality assurance and quality control (QA/QC) measures to be adopted.
- define the data collection and management requirements for the project.

1.3 Scope of works

To meet the OMP (Coffey, 2019a) objectives, the following scope of works are for a three-year monitoring period (2019 to 2022) as detailed in the Base OMP. The scope of works has been extended an additional two years from 2022 to the end of 2024 and has been updated to address identified data gaps and recommendations from previous sampling rounds. This is reflected in **Table 1** and will be implemented for the remaining duration of the OMP (Coffey, 2019a).

Table 1 Scope of Works- Yearly Monitoring Commitment

Sample matrix	Number of sample locations	Laboratory analysis	Frequency	Number of monitoring events per year	Approximate monitoring period
Groundwater (on- and off-Base bores)	34 monitoring locations	Standard PFAS Laboratory Suite (Department of Defence 2022)	Biannual	2	End-Wet season (March), and end-Dry season (October-December)
Surface water (off-Base)	14 monitoring locations	Standard PFAS Laboratory Suite (Department of Defence 2022)	Twice in Wet Season	2	Start-Wet season (undertaken as soon as practicable after a first flush rain event), nominally December/January,

Sample matrix	Number of sample locations	Laboratory analysis	Frequency	Number of monitoring events per year	Approximate monitoring period
					and end-Wet season (March).
Surface water (off-Base)	1 monitoring location	Standard PFAS Laboratory Suite (Department of Defence 2022)	Monthly throughout Wet season	5	Monthly December – April.
Surface water (off-Base)	1 monitoring location	Standard PFAS Laboratory Suite (Department of Defence 2022)	Monthly throughout Wet season and twice during the dry season	7	Monthly December – April, and June and August.
Surface water (on-Base)	2 monitoring location	Standard PFAS Laboratory Suite (Department of Defence 2022)	Monthly throughout Wet season	5	Monthly December – April.
Surface water (on-Base)	7 monitoring locations	Standard PFAS Laboratory Suite (Department of Defence 2022)	Twice in Wet Season	2	Start-Wet season (undertaken as soon as practicable after a first flush rain event), following a greater than 100mm rain event, nominally December/January), and end-Wet season (March)
Aquatic biota (off-Base)	6 monitoring locations	Standard PFAS Laboratory Suite (Department of Defence 2022)	Annually	1	End-Dry season or start-Wet season (October –December)

All samples collected will be analysed for the standard PFAS Laboratory Suite at a NATA accredited laboratory.

2.0 Site Identification

2.1 Site details

The Base is located on the Stuart Highway approximately seven kilometres from the Darwin central business district, adjacent to the suburbs of Winnellie, Ludmilla, Coconut Grove, Millner, Jingili, Moil, Anula, Malak, Karama, and the North Lakes Estate.

The Base encompasses an area of 1,278 hectares bounded by McMillans Road and the Northlakes Estate/Marrara Sports Complex to the north, Amy Johnson Avenue to the east, Stuart Highway to the south and Bagot Road to the west. Darwin International Airport (DIA) occupies an area within the northwest of the Base.

The Base is an operational joint civil-military airfield. The Base has administrative, accommodation, recreational and operational support facilities as well as technical workshops, aircraft hardstands and aircraft pavements. In addition to civil aircraft operations, the airfield supports both Australian and international military aircraft operations. Aircraft movement areas (runways and taxiways) are utilised by both civilian air operations and Defence.

The Management Area includes selected areas of RAAF Base Darwin, selected portions of the surface water bodies of Rapid Creek, Ludmilla Creek, Reichardt Creek, and Sadgroves Creek and groundwater containing PFAS in the suburb of Ludmilla, Rapid Creek, and Winnellie.

2.2 Conceptual site model

The Conceptual Site Model (CSM) is presented in the Human Health Risk assessment (HHRA) report (Coffey 2018a) and the Supplementary Detailed Site Investigation (DSI) (Coffey, 2018c) which summarises the linkages between sources, exposure pathways and receptors and PFAS extents.

3.0 Data Quality Assessment

3.1 Data quality objectives

The amended National Environmental Protection Measure (NEPM, Schedule B [2]) Guideline on Site Characterisation (2013) specifies that the nature and quality of the data produced in an investigation will be determined by the Data Quality Objectives (DQOs). As referenced by the NEPM, the DQO process is detailed in the United States Environmental Protection Agency (US EPA) *Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4: EPA/240/B-06/001), February 2006.*

The US EPA defines the process as *'a strategic planning approach based on the Scientific Method that is used to prepare for a data collection activity. It provides a systematic procedure for defining the criteria that a data collection design should satisfy, including when to collect samples, where to collect samples, the tolerable level of decision errors for the study, and how many samples to collect'.*

The process of establishing appropriate DQOs is defined according to the following seven steps (**Table 2**):

Table 2 The seven steps in defining DQOs

Step	Data quality objective step
1	***State the problem*** – Define the problem that necessitates the study; identify the planning team, examine budget, schedule.
2	***Identify the goal of the study*** – State how environmental data will be used in meeting objectives and solving the problem, identify study questions, define alternative outcomes.
3	***Identify information inputs*** – Identify data and information needed to answer study questions.
4	***Define the boundaries of the study*** – Specify the target population and characteristics of interest, define spatial and temporal limits, scale of inference.
5	***Develop the analytic approach*** – Define the parameter of interest, specify the type of inference, and develop the logic for drawing conclusions from findings.
6	***Specify performance or acceptance criteria*** – Develop performance criteria for new data being collected or acceptable criteria for existing data being considered for use.
7	***Develop the plan for obtaining data*** – Select the resource-effective sampling and analysis plan that meets the performance criteria.

The approach adopted relative to the seven steps presented above is discussed below.

3.1.1 Step 1 – State the problem

PFAS contamination at the Base has led to the contamination of soil, groundwater, and surface water. PFAS has been measured within biota from surrounding surface water bodies. Advice has been provided to NT agencies regarding the consumption of biota in some water bodies surrounding the Base, as well as various advice regarding management of maintenance activities on the Base. Monitoring of the concentrations of PFAS in the environment is required to ensure that health advice provided to the NT agencies is relevant and appropriate and risks to human health and environmental receptors are managed.

3.1.2 Step 2 – Identify the goal of the study

The overall goal of the study is to establish a systematic routine groundwater, surface water and biota sampling and analysis program to provide current and ongoing information on the distribution and concentrations of PFAS in the Management Area.

Specific goals of the program are to:

- understand the changes and trends in the nature, extent, and magnitude of PFAS concentrations in the groundwater, surface water and biota within the Management Area.
- understand if the nature, extent, and magnitude of PFAS concentrations has changed significantly to warrant a revision to the human health and environmental risk assessments.
- understand if the nature, extent, and magnitude of PFAS concentrations have changed significantly to warrant refinement of any existing management measures.

3.1.3 Step 3 – Identify information inputs

To allow assessment of the data against the study goal listed in Step 2 above, the following inputs will be considered:

- PFAS results from previous environmental investigations
- meteorological data including rainfall
- groundwater, surface water and biota sample data collected and analysed for PFAS
- groundwater elevation data
- surface water conditions at time of sampling of surface water and biota
- statistical analysis to identify trends
- advances in laboratory analytical approaches and changes in regulatory requirements.

3.1.4 Step 4 – Define the boundaries of the study

The spatial and temporal boundaries that apply for data collection are detailed below and will influence the decision-making process for ongoing monitoring:

- The spatial boundary for data collection and decision making is limited to the Management Area shown in Figure 1.
- The sampling completed as part of the OMP (Coffey, 2019a) will be limited to groundwater, surface water and biota at the frequencies defined in Section 4.0.
- The monitoring has occurred over an initial period of three years with the inclusion of an additional two-year extension through July 2024, the need for ongoing monitoring thereafter will be considered.

3.1.5 Step 5 – develop the analytical approach

The decision rules can be defined as:

- Analytical selection; all samples will be analysed for the extended PFAS suite (Department of Defence 2022).
- Analytical method selection for PFAS is based on achieving appropriate laboratory Limit of Reporting (LOR) in the various media to be analysed.
- Sample locations have been selected with the objective of monitoring PFAS trends (temporal and seasonal), providing early warning of changes in the migration of PFAS in surface water and groundwater.
- If the laboratory quality assurance/quality control data are within the acceptable ranges, the data will be considered suitable for use.
- If PFAS concentrations are reported above the laboratory LOR, where it was previously <LOR, then it will be considered whether further assessment of the data will be required.

- If the PFAS concentrations in groundwater, surface water and biota sampling locations show an increasing trend over two years of monitoring or increase by >30% in one year, then Defence shall be notified of the results, a review of the OMP (Coffey, 2019a) shall be considered, and the need for further assessment shall be considered.

The decision on the acceptance of the analytical data should be made on the basis of the Data Quality Indicators (DQIs) as follows:

- **Precision:** A quantitative measure of the variability (or reproducibility) of data.
- **Accuracy**: A quantitative measure of the closeness of reported data to the “true” value.
- **Representativeness**: The confidence (expressed qualitatively) that data are representative of each media present on Base..
- **Completeness**: A measure of the amount of useable data from a data collection activity.
- **Comparability**: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.

3.1.6 Step 6 – specify performance or acceptance criteria

Specific limits for the works included in the OMP (Coffey, 2019a) are in accordance with the appropriate guidance made or endorsed by state and national regulations, appropriate indicators of data quality, and standard procedures for field sampling and handling.

This step also examines the certainty of conclusive statements based on the available new data collected. This should include the following points to quantify tolerable limits:

- A decision can be made based on a certainty assumption of 95% confidence in any given data set. A limit on the decision error will be 5% that a conclusive statement may be a false positive or false negative.
- A decision error in the context of the decision rule presented above would lead to either underestimation or overestimation of the risk level associated with a particular sampling area.
- Sampling errors may occur when the sampling program does not adequately detect the variability of a contaminant from point to point across the Base. To address this, alternate locations may be sampled, or additional sampling events may be conducted. There may be limitations in the data if aspects of the OMP (Coffey, 2019a) cannot be implemented, such as:
  - Surface water or groundwater sample locations may be dry at the time of sampling.
  - Groundwater sampling locations are damaged or destroyed and therefore cannot be sampled.
  - Access to some sampling locations could be being restricted due to operational activities or inaccessible due to weather.
- Measurement errors can occur during sample collection, handling, preparation, analysis, and data reduction. To address this the following measures are proposed:
  - Collection of sufficient sample mass to facilitate analysis reported to standard laboratory detections limits. Collection of insufficient sample mass may result in raised detection limits.
  - Field staff to follow a standard procedure when collecting samples, including decontamination of tools, and use of appropriate sample containers and preservation methods.
  - Laboratories to follow a standard procedure when preparing samples for analysis and undertaking analysis.
  - Laboratories to report quality assurance/quality control data for comparison with the DQIs established for the SAQP.

3.1.7 Step 7 – Optimise the design for obtaining data

The methodology presented in this SAQP is designed to meet the Project objectives and to achieve the nominated DQOs. Optimisation of the data collection process will be achieved by:

- Working closely with the analytical laboratories and sampling equipment suppliers to ensure that appropriate procedures and processes are developed and implemented prior to and during the fieldwork, to ensure that sample handling, and transport to and processing by the analytical laboratories is appropriate.
- Conducting sampling according to Defence and Australian Standards for the type of sampling being conducted (i.e. groundwater monitoring well sampling versus landholder bore water sampling). These standards are as follows:
  - Department of Defence (July 2018, Amended August 2019), *Contamination Management Manual*
  - Standards Australia (AS/NZS5667.11–1998) Water Quality – Sampling, part 11: *Guidance on sampling of groundwater*
  - Standards Australia (AS 4482.1-2005) *Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds*
  - Standards Australia (AS 4482.2-1999) *Guide to the sampling and investigation of potentially contaminated soil, Part 2: Volatile Substances*
  - HEPA (2020) PFAS National Environmental Management Plan (NEMP) 2.0.
- Conducting sampling in accordance with AECOM's internal PFAS Sample Collection Guidance.
- Sampling conducted by suitably qualified and experienced field staff.
- Basing the sampling upon a CSM developed using the information available at the implementation of the SAQP. Updating the CSM as new data becomes available in the course of the implementation of the SAQP, as required.
- Progressive review of the data throughout the initial three-year OMP (Coffey, 2019a) period plus additional two-year extension and modification of sampling programs to optimise the value of data generated.

If the objectives of the SAQP are not being met, the sampling design and approach will be reviewed and amended, as required.

3.2 Assessment of data quality

The quality of data collected as part of the sampling will be assessed on a range of factors including:

- Documentation and data completeness
- Data quality – comparability, representativeness, precision, and accuracy of the analytical data.

The project target for data completeness is to achieve 95% of data as suitable for use.

The acceptance criteria for DQIs for samples are specified in **Table 3**

Table 3 Acceptance Criteria for Data Quality Indicators for Sample Analysis

Data quality indicators	Acceptance criteria
Water and biota samples	
Rinsate blanks (where sampling equipment is reused)	Less than the laboratory LOR.
Field blanks	Less than the laboratory LOR.
Field intra- and inter-laboratory duplicates	The RPDs will be assessed as acceptable if less than or equal to 30% as per the NEPM Schedule B3. Where the results show greater than 30% difference a review of the cause will be conducted (NEPM, 2013). It is noted that RPDs that exceed this range may be considered acceptable where: • results are less than 10 times the LOR (no limit) • results are less than 20 times the LOR and the RPD is less than 50% • heterogeneous materials are encountered.
Laboratory duplicates	RPDs less than: • 20% for high level laboratory duplicates (i.e. >20 x LOR) • 50% for medium level laboratory duplicates (i.e. 10 to 20 x LOR).
Matrix spikes	Recoveries between 70-130% of the theoretical recovery or as nominated in the laboratory's QC report, based on their historical database.
Laboratory method blanks	Less than the laboratory LOR.
Laboratory control samples	Recoveries between laboratories specified range for each analyte / analytical suite (Department of Defence 2022).

4.0 Sampling Location Rationale and Methodology

The OMP (Coffey, 2019a) is presented as **Appendix F** of the RAAF Base Darwin PMAP (Defence, 2019) and identifies the specific inputs required to meet Defence's long-term strategic goals in relation to the management of PFAS contamination at the Base.

The OMP (Coffey, 2019a) presents an overview of specific monitoring works to be undertaken and provides the basis for the preparation of this SAQP. This scope of works presented in this SAQP is consistent with that detailed in the OMP (Coffey, 2019a), with the exception of those points of deviation presented in Section 4.19.

4.1 Proposed schedule

The key elements of the OMP (Coffey, 2019a) are bi-annual monitoring of groundwater and off-base surface water locations, twice yearly (Wet season only) of on-base surface water locations and annual monitoring of biota within Rapid and Ludmilla Creeks. Selected surface water locations will undergo monthly sampling during the wet season, and one of these will undergo mid dry season sampling in both June and August. Bi-annual events are to occur at the end of wet season and end of dry season when groundwater and surface water conditions reflect seasonal influences. On-Base locations have been nominated for wet-season sampling only to assess concentrations and flow rates in drains that capture run-off from PFAS source areas or where significant discharge of water has been observed. The annual biota sampling is to occur at the end of the Dry season prior to substantial commencement of the Wet season, when concentrations are expected to be highest.

Sample events should be conducted in the following periods:

- Start of wet season, December/January- Monthly surface water sampling during wet season, December/January/February/March/April
- End of wet season, March/April
- Mid dry season sampling, June/August
- End of dry season, October/November

A program schedule is presented in **Appendix A**.

Table 4 Proposed annual schedule

Season	Event	Sampling period	Reporting period
Early mid wet season	Monthly surface water sampling- On-Base/ Off-Base	January-April	June Factual Report
Mid late wet season	Biannual groundwater sampling On-Base/ Off-Base	March	
	End of wet season surface water sampling- On-Base/ Off-Base	March	
	Monthly wet season surface water sampling- On-Base/ Off-Base	January-April	
Early mid dry season	June and August surface water sampling	June and August	January Factual Report

Season	Event	Sampling period	Reporting period
Late dry season	Biannual groundwater sampling- On-Base/ Off-Base	October	
	Annual aquatic biota Off-Base	October-December	

4.2 Access requirements for sampling on RAAF Base Darwin

4.2.1 Access requirements for sampling on-Base

A range of access requirements exist to gain access to the appropriate areas for the collection of groundwater and surface water samples. Initiating contact with RAAF Base Darwin no less than two weeks prior to sampling is necessary to ensure all access requirements are satisfied and approved by Base Management.

To gain access to RAAF Base Darwin each field team member must obtain baseline clearance from Defence and receive a Defence Common Access Card (DCAC), which allows unescorted entry to the base. Field team members without baseline clearance and DCAC's will need to be escorted by a field team member that has escort authority associated with their DCAC or have arranged an escort prior to sampling.

To conduct works on the Base, Estate and Infrastructure Group (E&IG) the contracted Base Manager E&IG, must be contacted to inform them of the intended works and to gain permission prior to carrying those out. As well as grant permission to conduct works, E&IG will alert the dedicated field team of any conflicting works on base. Photo permits must be obtained from E&IG upon arrival at the base, no photos are to be taken before this is done.

If sample locations occur in a construction site, the field team will need to get permission from the project manager to access the site. Any internal inductions for the site will also need to be completed by the team upon the project manager's request.

2nd Security Forces Squadron RAAF (2SECFOR) is the Base security service and will need to be made aware of the works to be carried out and the locations that sampling will occur in.

To gain access to the airside locations a Work Safety Officer (WSO) will need to be contacted and present for the duration of airside activities. Field team members entering airside locations will need to ensure they complete airside awareness training. This can be organised by enquiring with E&IG.

For sampling locations in the ordnance area, Defence contractor Thales, will need to be contacted to arrange entry, and 2SECFOR alerted to the fact that the team has intention to enter the area.

4.3 Groundwater sample location rationale

There are 34 monitoring wells identified for ongoing monitoring, including on-Base and off-Base locations (comprising of public land access). The OMP (Coffey, 2019a) will monitor groundwater source area concentration changes and changes that may occur at the Base boundary or off-Base locations, which could indicate a change in contaminant transport off-Base.

Table 5 Groundwater Sample Rationale

Area	Rationale
On-Base	• monitor spatial and temporal variations in PFAS concentrations in groundwater up, down and cross-gradient of source areas. • assess if groundwater PFAS concentrations within and downgradient of the source areas change in response to management measures over time • provide data to estimate mass of PFAS entering Rapid Creek in the future and monitor changes.

Area	Rationale
Off-Base - North	• monitor the spatial and temporal variation in the northern extents of the plume boundary. • provide data to estimate mass of PFAS entering Rapid Creek in the future and monitor changes.
Off-Base – South	• monitor the spatial and temporal variation in the southern extents of the plume boundary. • provide data to estimate mass of PFAS entering Sadgroves and Reichardt Creeks in the future and monitor changes.
Off-Base – West and Southwest	• monitor the spatial and temporal variation in the western and south-western extents of the plume boundary. • provide data to estimate mass of PFAS entering Ludmilla Creek in the future and monitor changes.

4.4 Groundwater sampling locations

The groundwater sample locations to be monitored are presented in Table 6 below, on **Figure 2** in **Appendix B** and **Table 1**, **Appendix C**.

Table 6 Groundwater Monitoring Locations

Area	Description	Sampling location code	Sampling frequency	Number of wells/bores
On-Base	Former Fuel Farm 1 and Hanger 31	MW215	Bi-annual (End-Wet season, and end-Dry season)	**On-Base** (22 locations)
	Former Fuel Farm 5	MW297, MW112		
	Former Fuel Farms 4 & 6	MW303, MW133, MW205		
	Former Fire Training Area 1	MW422, MW139		
	Current Fire Training Area	MW240, MW241		
	RAAF Fire Station	MW103		
	Former ARFF Fire Station	MW115		
	Source area downgradient transect	MW107, MW128		
	Southern boundary of Base	MW141, MW144		
	Western boundary of Base	MW148		
	Rapid Creek - Eastern end	MW156		
	Western Boundary	MW451 and MW452		
	Current Fire Training Area (CFTA)	MW453		
	Centreline of plume from Former Fire Training Area 1 (FFTA1)	MW454		

Area	Description	Sampling location code	Sampling frequency	Number of wells/bores
Off-Base	Former Fire training area 2 (DIA)	MW197	Bi-annual (End-Wet season, and end-Dry season)	**Off-Base** (12 locations)
	Off-Base-north	MW185		
	Rapid Creek	MW191, MW190, MW194, MW195		
	Off-Base-south	MW176, MW180, MW200, MW209		
	Off-Base southwest	MW211		
	Off-Base-west	MW210		

4.5 Surface water sampling location rationale

There are 23 surface water locations identified for ongoing monitoring, including on-Base and off-Base locations (comprising of public land access). The OMP (Coffey, 2019a) will monitor water quality in the surface water systems down gradient of the Base (Rapid, Sadgroves, Reichardt and Ludmilla Creek), and site run-off drains (**Table 7**). The on-Base locations were nominated to assess concentrations and flow rates in drains that capture run-off from PFAS source areas or where significant discharge of water has been observed.

Table 7 Surface Water Sample Rationale

Area	Rationale
On-Base	• Assess concentrations and flow rates in drains that capture run-off from PFAS source areas, or where significant discharge of water has been observed. • Monitor concentrations of PFAS in stormwater leaving the Base. • Monitor concentrations of PFAS in Rapid Creek. • Monitor medium-term effects of remediation where the FFTA1 plume discharges post wet season.
Off-Base	• Monitor spatial and temporal variations in PFAS concentrations in surface water systems down gradient of the site (Rapid, Sadgroves, Reichardt and Ludmilla Creek. • Monitor concentrations of PFAS in Rapid and Ludmilla Creek.

4.6 Surface water sampling locations

The surface water monitoring locations have been selected to maintain consistency with the monitoring completed during the interim monitoring events and the investigation phases.

Many of the locations have been previously sampled several times, and continued monitoring will provide additional data to assess temporal variability. The locations to be monitored vary between a biannual (twice yearly) and monthly wet season basis and are provided in **Table 8** below, on **Figure 3** in **Appendix B** and **Table 2**, **Appendix C**.

Table 8 Surface water sampling locations

Area	Description	Sampling location code	Sampling frequency	Number of locations
On-Base	Surface water flow – current fire training ground	SW156	Twice yearly (Start-Wet season, end-Wet season)	**On-Base (8 locations)**

Area	Description	Sampling location code	Sampling frequency	Number of locations
	Stormwater pipe - Airside operations	SW160		
	Stormwater– southern boundary	SW162		
	Surface water drain - near Former Fuel Farm 5	SW178		
	Surface water drain - north of Former Fuel Farms 4 & 6	SW181		
	Rapid Creek	SW152		
	Surface water drain - Eastern end of runway	SW170	Monthly sampling through Wet season (Dec – Apr)	
	Drainage from FFTA1	SW312		
Off-Base	Rapid Creek	SW104, SW106, SW108, SW112, SW113	Twice yearly (Start-Wet season, end-Wet season)	**Off-Base (16 locations)**
	DIA drain to Rapid Creek	SW114, SW115, SW168		
	Ludmilla Creek	SW120, SW124, SW125		
	Reichardt Creek	SW132, SW133		
	Drain to Sadgroves Creek	SW143		
	Osgood Drive	SW300	Monthly sampling through Wet season (Dec – Apr)	
	Rapid Creek	SW109	Monthly sampling through Wet season (Dec – Apr) and once in both June and August	

4.7 Biota sampling locations

In addition to collection of groundwater and surface water samples, aquatic biota (fish and aquatic invertebrates) sampling will occur to supplement existing datasets and support any future reviews of human exposure risk to ingestion of biota containing PFAS.

The Northern Territory Department of Health have issued dietary advisories relating to consumption of fish in Rapid Creek and Ludmilla Creek. Monitoring of PFAS concentrations within fish and aquatic species within Rapid Creek is important to ensure that the health guidance provided is appropriate and continues to be relevant.

Ethics approvals and Fisheries/Parks & Wildlife licences will be obtained prior to biota sample collection.

Target species will be based on those that are recognised as frequently consumed from the following three groups:

- Diadromous or estuarine fish (Barramundi, Flathead, Javelin, Sweetlips, Mullet, Rockcod, Queenfish, Jewfish etc)

- Molluscs (Longbums [*Telescopium Telescopium*] and Whelk)
- Crustaceans (Redclaw Crayfish [*C.quadricarinatus*]).

The six suitable locations identified for sample collection, and aquatic biota target species at each location, are presented in **Table 9**, on **Figure 4** in **Appendix B**. and **Table 3** in **Appendix C**.

The sample locations as presented in **Figure 4** (**Appendix B**) are not the exact locations for collection of biota samples but rather the downstream extent of the study reach. The exact location will spread over a couple hundred meters, where possible, but within the same habitat type as the locations identified on **Figure 4** (**Appendix B**) per day of sampling.

Target sample numbers from each location are presented in **Table 9**, however the number of samples collected will vary based on what is caught.

Table 9 Aquatic biota target samples

Location	Sample location code[1]	Indicator/target species	Target sample numbers	Sampling frequency
Rapid Creek – (Freshwater) - Upstream of Trower Road	BIOFA024/ BIOFA026/ BIOFA028 or new location	Crustaceans	Minimum three of at least 100g	Once yearly (End-Dry season or start-Wet season – October - December)
Ludmilla Creek (Estuarine area)	BIOFA016 or new location	Molluscs	Five composite samples of 10 molluscs	
Rapid Creek mouth (Casuarina Drive)	BIOFA007	Diadromous or estuarine fish	Three samples of each of 5 species of commonly consumed fish (15 total)	
Ludmilla Creek Boat Ramp)	BIOFA018	Diadromous or estuarine fish	Three samples of each of 5 species of commonly consumed fish (15 total)	

4.8 Sample collection and handling

4.8.1 Groundwater sampling

The groundwater sampling methodology and schedule are presented in **Table 10**.

Table 10 Groundwater Sampling Methodology and Schedule

Item	Details
Groundwater gauging	The depth to groundwater will be measured in each monitoring well prior to collection of groundwater samples. The depth to water to the nearest mm will be measured from the survey mark or highest point of the well casing. The date, time, well condition and any odours will be recorded. Gauging of all locations will be conducted prior to groundwater sampling to enable groundwater contours to be developed. The depth to groundwater will also be measured at the time of sampling at each location. All gauging shall be completed within a 24-hour period.

[1] Note: Biota monitoring location ID's provided in the OMP (Coffey, 2019a) were not compliant with the DCMM guidance and have been updated to meet Defence requirements.

Item	Details
	LNAPL may be detected at some monitoring locations. For wells with potential LNAPL presence use an interface probe to measure depth to water. In the event that LNAPL is detected, measure the thickness and confirm using a disposable bailer.
Sample collection methodology	**Groundwater monitoring wells** Groundwater samples will be collected from monitoring wells using no purge methodology with HydraSleeves™ which will be installed with the top of the HydraSleeve™ collar approximately one-metre below standing water level (SWL) or one-metre below the top of the screened section (whichever is deepest) for a minimum of 24-hours prior to sampling for the initial sampling round. Following sample collection, field parameters will be recorded ex-situ. All Groundwater Wells will be sampled using the HydraSleeves™ method.
QA/QC samples to be collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples, rinsate samples (where non-dedicated equipment is used), field blanks and trip blanks. Duplicate samples are to be collected at a minimum frequency of 1 in 10 PFAS primary samples. Rinsate samples are to be collected at a rate of one sample per day of sampling when non-dedicated equipment is used, by pouring laboratory supplied PFAS free deionised water over the decontaminated sampling equipment. Field blank samples are to be collected at a rate of one per day of sampling. Trip blanks are to be collected a rate of one per esky. Additional sample volume is required to be collected to enable the appropriate laboratory QA/QC.
Field parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality will be recorded for all samples.
Sample analysis	All primary samples will be submitted for PFAS extended suite (Department of Defence 2022) using the standard levels of detection.
Sampling schedule	As per **Appendix A**.
Minimum sampling volumes	**Bottle** / **Minimum volume** PFAS Bottle (White) / 2 x 20mL

4.8.2 Surface water sampling

The surface water sampling methodology and schedule are presented in **Table 11**

Table 11 Surface water sampling methodology and schedule

Item	Details
Sample collection methodology	Samples are to be collected, using a telescoping sampling pole with laboratory supplied bottle on the end, from approximately 0.5 m below the surface (if possible), with care to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container should be lowered into the water using a decontaminated sampling pole, with the cap immediately applied once the container is full. Following sample collection, field parameters will be recorded ex-situ by placing the water-meter probe into a separate cup filled with surface water from the collection location.

Item	Details	
QA/QC samples to be collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples, rinsate samples (where non-dedicated equipment is used), field blanks and trip blanks. Duplicate samples are to be collected at a minimum frequency of 1 in 10 PFAS primary samples. Rinsate samples are to be collected at a rate of one sample per day of sampling when non-dedicated equipment is used by pouring laboratory supplied PFAS free deionised (DI) water over the decontaminated sampling equipment. Field blank samples are to be collected at a rate of one per day of sampling. Trip blanks are to be collected a rate of one per esky. Additional sample volume is required to be collected to enable the appropriate laboratory QA/QC.	
Field parameters	Temperature, EC, DO, ORP, pH and observations of water quality will be recorded for all samples.	
Sample analysis	All primary samples will be submitted for PFAS Full suite (Department of Defence 2022) using the standard levels of detection.	
Sampling schedule	The monitoring will include 9 monitoring events at Off-Base locations and 7 monitoring events at on-Base locations on an annual basis. Sampling will be completed nominally December/January (Q1, undertaken as soon as practicable after a first flush rain event) and March (Q2), corresponding to start and end of Wet Season (respectively).	
Minimum sampling volumes	PFAS Bottle (White)	2 x 20 mL

4.8.3 Biota sampling

The biota sampling methodology and schedule are presented in Table 12.

Table 12 Biota sampling methodology and schedule

Item	Details
Sample collection methodology	Estuarine fish will be collected using 4-6-inch gill nets set three hours before low tide. Nets will be continuously monitored from a small boat and cleared when movement is detected. Non-target species will be released immediately. Selected biota will be identified, measured, weighed and euthanized humanely according to the animal ethics permit conditions. Redclaw will be captured using Opera House traps baited with raw beef (purchased from supermarket). Traps will be set overnight in freshwater pools and collected early morning. Longbums will be hand-collected during low tide from the mangroves. Redclaw and Longbums will be rinsed, placed in snap-lock bags and euthanised by freezing. Samples will be prepared based on the following procedure: • Rinse equipment with PFAS-free DI water. • Dtore samples in snap-lock bags until preparation. • Weigh, measure and record species and location caught. • target fish and opportunistic catch species: - Use opened bag as board cover. - Clean knife/blade with DI water.

Item	Details
	- Collect 50 – 100 g samples per sample collection bag for each species following lab specifications for total number of samples per species. - For large fish the complete tissue samples of edible flesh should be collected. Samples from large fish should not be composited if possible. - For smaller fish, samples need to be provided whole with entrails removed. Head and tail can be removed from smaller fish where necessary for placing in bags. - Tissue from the same species caught in the same area may be composited as a single sample if individuals do not meet 50g minimum. - Collect rinsate sample after cleaning reusable equipment (run DI water over equipment and collect in PFAS sample bottle). Fill bottle (minimum half filled). • for Redclaw Crayfish: - Rinse in DI water. - Composite whole as 50-100g samples (about 3-5 individuals per sample). • for Longbum: - Place shells inside a sample bag and carefully smash shells with a hammer, then extract tissue with forceps. - Wash tissue with DI water. - Composite 10 individuals as a sample. • Double bag all samples and label inner bag. • Freeze and pack in eskies with frozen water bottles.
QA/QC samples to be collected	Quality control samples in the form of rinsate blanks will be collected from the sampling and processing equipment from each of the sampling areas to understand if there is the potential for cross contamination from the materials being used in sampling. Intra- and inter-laboratory duplicate samples will be collected from large fish across different species, if possible, at a rate of one duplicate sample for every ten fish sampled. Intra- and inter-laboratory duplicate samples will be collected only from fish where a primary complete sample can be taken from one fillet side, and the duplicate sample can be collected from the opposite fillet side.
Sample analysis	Samples will be prepared for analysis by Eco Logical at the Department of Fisheries laboratory prior to dispatching to the primary laboratory. This will include removal of scales/shell, head, and internal organs. Fillets will be taken with skin intact and homogenised prior to sub-sampling and analysis. All whole samples and composites will be tested for the extended suite (Department of Defence 2022) of PFAS. The number of samples analysed are pre-determined and based off the minimum quantity requirements as specified above. Additional samples will be kept frozen until the required analysis or reanalysis is confirmed. Laboratory analysis will be conducted by a NATA accredited laboratory for PFAS (EP231X).

Item	Details
Sampling schedule	The monitoring will include annual monitoring events with sampling completed October/December, corresponding to end of Dry season / start of Wet season.

4.8.4 Sample handling and transport to laboratory

AECOM personnel will attempt to reduce heterogeneity in the sample media matrix by dividing the sample collected between primary and inter/intra-laboratory collection jars or bottles during sampling. All samples will be placed on ice in eskies immediately after sampling. Biota samples will be stored in double zip-lock bags, frozen and packed in eskies with frozen water bottle ice bricks.

All samples will be kept, if possible, at approximately 4°C during transit to the laboratory. Samples will be transported directly to the laboratory for analytical testing under standard Chain of Custody (CoC) procedures. Primary and field QA/QC samples (except inter-laboratory duplicate samples) will be analysed by Australian Laboratory Services (ALS), a National Association of Testing Authorities (NATA) accredited laboratory. The inter-laboratory duplicate samples, if feasible to collect, will be analysed by National Measurement Institute (NMI), also a NATA accredited laboratory. Due to the nature of biota samples, it isn't always feasible to collect inter-laboratory samples, however, field staff will attempt to collect inter-laboratory samples if enough biota sample material is available.

Prior to sampling, assessment of the analytical holding times will be made, and the sampling planned accordingly to ensure that holding times are not breached or minimised.

4.9 Calibration

The water quality meter will be calibrated prior to field mobilisation for field activities with relevant solutions, including pH, EC and ORP. The calibration will be in accordance with manufacturers' instructions or NATA publication "General Requirements for Registration: Supplementary Requirement: Chemical Testing (NATA 1993) and Technical Note N0. 19 (NATA 1994)". Where satisfactory calibration cannot be achieved, the water quality data will not be used for interpretive purposes.

Calibration details will be recorded on a calibration record sheet and included in the Sampling Events Factual Reports.

4.10 Logistics

The laboratory sample containers will be shipped from the laboratory to the AECOM office in Darwin prior to the commencement of fieldwork. All primary samples will be transported by an ALS supplied courier at the completion of fieldwork. All inter-laboratory duplicate samples will be transported with the primary samples, then separated and couriered directly to the secondary laboratory (NMI, Sydney) by ALS under a separate CoC for analysis.

4.11 Analytical suite and laboratory analysis methods

4.11.1 Laboratory NATA accreditation details

Laboratory Sampling analysis is to be conducted using NATA certified laboratories which will implement a quality control plan in accordance with NEPM (2013).

4.11.2 Analytical schedule

All media sampled shall be analysed for the extended PFAS suite (Department of Defence, 2022) with standard LOR as outlined in **Table 13** below.

Table 13 Sample Analytical Suite for PFAS

PFAS group	Compound	CAS No.
Perfluoroalkyl Sulfonic Acids	Perfluorobutane sulfonic acid (PFBS)	375-73-5
	Perfluoropentane sulfonic acid (PFPeS)	2706-91-4
	Perfluorohexane sulfonic acid (PFHxS)	355-46-4

PFAS group	Compound	CAS No.
	Perfluoroheptane sulfonic acid (PFHpS)	375-92-8
	Perfluorooctane sulfonic acid (PFOS)	1763-23-1
	Perfluorodecane sulfonic acid (PFDS)	335-77-3
Perfluoroalkyl Carboxylic Acids	Perfluorobutanoic acid (PFBA)	375-22-4
	Perfluoropentanoic acid (PFPeA)	2706-90-3
	Perfluorohexanoic acid (PFHxA)	307-24-4
	Perfluoroheptanoic acid (PFHpA)	375-85-9
	Perfluorooctanoic acid (PFOA)	335-67-1
	Perfluorononanoic acid (PFNA)	375-95-1
	Perfluorodecanoic acid (PFDA)	335-76-2
	Perfluoroundecanoic acid (PFUnDA)	2058-94-8
	Perfluorododecanoic acid (PFDoDA)	307-55-1
	Perfluorotridecanoic acid (PFTrDA)	72629-94-8
	Perfluorotetradecanoic acid (PFTeDA)	376-06-7
Perfluoroalkyl Sulfonamides	Perfluorooctane sulphonamide (FOSA)	754-91-6
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2
	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6
(n:2) Fluorotelomer Sulfonic Acids	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4
	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0

The current standard laboratory limits of reporting (LOR) are described in **Table 14** below.

Table 14 Laboratory Limits of Reporting

Sample media	Parameter	Technique/method reference	LOR*
Groundwater and Surface Water	Extended PFAS Suite (Department of Defence 2022)	LC/MS-MS	0.01 – 1.0 µg/L
Biota	Extended PFAS Suite (Department of Defence 2022)	EP231X	0.5 – 5 µg/kg

LC/MS-MS = Liquid chromatography–mass spectrometry
*LOR for Australian Laboratory Services (ALS)

4.12 Sample nomenclature

In order to meet Defence data management requirements presented in **Section 4.0** of **Annex L** of the Defence Contamination Management Manual (DCMM) (Department of Defence, 2021), a consistent sample nomenclature has been adopted for the program. All samples collected from each location should have a unique identification. The minimum mandatory requirements for the sample identifications are outlined in **Table 15**, further examples relevant to this SAQP are outlined in **Table 16**.

Table 15 Mandatory requirements for Defence sample nomenclature

Sample ID	Location ID
PPPP_XX000_ZZZ_YYMMDD	XX000
e.g. 1302_BH001_1.2_190207	e.g. BH001
Reference	
PPP – property identification (4-digits) XX – type of sample recovery 000 – location specific identification ZZZ – indicates the depth that the sample has been collected (in meters below ground level [bgl] YYMMDD – date of sample collection	

Table 16 Sample Abbreviations

Abbreviation	Meaning	Matrix	Examples of methods of sampling	Example sample name/comments
MW	Monitoring Well	Water or Soil	Groundwater	1302_MW104_180630
SW	Surface water	Water	Surface water	1302_SW002_180630
BIOAFA	Biota	Aquatic Fauna	Fish, crustaceans, invertebrates and their products; blood, roe etc	1302_BIOAFA001_190806

4.12.1 Quality assurance / quality control sample nomenclature

The naming convention for QA/QC samples are outlined in **Table 17**, below.

Table 17 QA/QC sample naming convention

QA/QC sample type	Naming convention (where XX is a sequential number independent of sample or matrix type)
Quality control duplicate samples	
Intra-Laboratory duplicate (duplicate)	1302_QC1XX_YYMMDD
Inter-Laboratory duplicate (triplicate)	1302_QC2XX_YYMMDD
Quality assurance samples	
Rinsate	1302_QC3XX_YYMMDD
Field Blank	1302_QC4XX_YYMMDD
Trip Blank	1302_QC5XX_YYMMDD

4.13 Defence ESdat requirements

Defence has contracted Earth Science Information Systems (EScIS), to provide contamination data management services through a cloud instance of its ESdat product.

All OMP (Coffey, 2019a) field and laboratory data collected by AECOM will be uploaded, stored and managed in Defence's ESdat database in accordance with Section 6 of Annex L to the Defence Contamination Management Manual. AECOM will refer to historical investigation data to ensure consistent location codes are used to enable analysis of data trends. Where required under Annex L, non-compliant location codes will be resolved under direction from Defence.

AECOM will upload the data from each monitoring event into ESdat prior to submitting the Sampling Event Factual Report.

4.14 Adopted screening criteria

PFAS screening values have been adopted for groundwater and surface water from the Defence OMP (Coffey, 2019a) and are derived from the following documents:

- HEPA (2020) PFAS NEMP 2.0
- Department of Health (DoH), 2019. Health Based Guidance Values for PFAS for use in site investigations in Australia. September 2019
- National Health and Medical Research Council (NHMRC), 2019. Guidance on PFAS in Recreational Water. August 2019 (NHMRC 2019)
- National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM).

Adopted PFAS screening values are provided in the **Table 18**.

Table 18 Adopted groundwater and surface water screening values (µg/L)

Pathway	Compound	Criteria	Comment / reference
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	These values are from the PFAS NEMP 2.0 (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	These values are from the PFAS NEMP 2.0 (HEPA, 2020). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Intake – food (Crustaceans)	Sum of PFOS+PFHxS	65 µg/kg	These values are from the Department of Health, 2019. *All biota samples will be compared to these criteria*.
	PFOA	520 µg/kg	
Intake – food (Finfish)	Sum of PFOS+PFHxS	5.2 µg/kg	
	PFOA	41 µg/kg	

Table 19 PFAS Criteria Summary: Ecological

Media	Pathway	Chemical	Criteria	Comment/reference
Water	Freshwater	PFOS	0.00023 µg/L	HEPA (2020) NEMP 2.0 99% species protection
		PFOA	19 µg/L	HEPA (2020) NEMP 2.0 99% species protection

Note: HEPA (2020) notes that the 99% species protection level for PFOS is close to the level of detection. Agencies may wish to apply a 'detect' threshold in such circumstances rather than a quantified measurement.

4.15 Waste management

Due to the proposed "no purge" sampling methodology, it is not anticipated that significant volumes of liquid waste would be generated that would require management or disposal.

Single use sampling equipment and any waste generated during works (including generation of wastewater or soil) will be managed and/or disposed of appropriately in accordance with Territory waste disposal requirements.

4.16 Quality assurance/quality control sampling

The recommendations within this document are based on the guidelines presented in:

- NEPM [the National Environment Protection (Assessment of Site Contamination) Measure 1999] as amended in 2013
- HEPA (2020) PFAS National Environmental Management Plan (NEMP) 2.0
- AS4482.1 Guide to the sampling and investigation of potentially contaminated soil, Part 1: Non-Volatile and Semi-Volatile Substances
- AS4482.2 Guide to the sampling and investigation of potentially contaminated soil, Part 2: Volatile Substances
- AS/NZ 5667.1 Water Quality Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handing of samples
- ANZG (2018). Guidelines for Fresh and Marine Water Quality
- ANZECC& ARMCANZ (2000). Australian and New Zealand guidelines for fresh and marine water quality
- WA DER (2016). Interim Guideline on the Assessment and Management of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

4.16.1 Field intra- and inter-laboratory duplicate samples

Intra-laboratory field duplicates will be collected at a frequency of one per ten samples that are collected (10%). Inter-laboratory field duplicates will be collected for groundwater and surface water samples at a rate of one sample per ten collected (10%). Biota intra-laboratory and inter-laboratory duplicate samples will be collected where fish are large enough, left and right fillets will be used as a duplicate sample for quality control analysis. Biota intra- and inter-laboratory will be collected at a minimum frequency of 1 per 10 primary samples. Due to the sample size of fish fillets not being large enough, intra- and inter-laboratory duplicates will be collected from different primary samples. The samples will be sent to a secondary laboratory once one is identified that offer the analysis of fish samples. Repeatability will be assessed by relative percentage difference (RPD) between primary and duplicate samples. If RPD has variability greater than 30% the sample will be reviewed. The minimum volume of intra- and inter-duplicate samples is to follow the below requirements set by the primary and secondary laboratories.

Rinsate samples will be prepared in the field using laboratory prepared bottles and PFAS free deionised water, poured over (if any) decontaminated sampling equipment (e.g. oil/water interface probe or hand trowel). Rinsate samples will be collected at a frequency of one per sampling day, where reusable sampling equipment has been used.

4.16.2 Rinsate samples

Rinsate samples will be prepared in the field using laboratory prepared bottles and PFAS free deionised water, poured over (if any) decontaminated sampling equipment (e.g., oil/water interface probe or hand trowel). Rinsate samples will be collected at a frequency of one per sampling day, where reusable sampling equipment has been used.

4.16.3 Field blank samples

Field blank samples will be prepared in the field using laboratory prepared bottles and PFAS free deionised water to capture any potential air-borne contaminants of concern. These will be collected at a frequency of one per sampling day for water sampling.

4.16.4 Trip blank samples

The trip blank water samples will be laboratory supplied and prepared in a clean environment, taken at a rate of one per esky, and will remain within the sample esky during the entire sampling event until arriving at the laboratory for analysis.

4.16.5 Laboratory QA/QC

Additional sample volumes will be obtained to enable laboratory QAQC (duplicates and matrix spike) for PFAS analysis. The frequency of additional samples is 2:10 and 3:20, where two additional sets (2x20mL) are required per 10 primary samples, or three sets per 20 primary samples.

4.17 Fieldwork documentation

4.17.1 Field observations and results

Field notes will be maintained to record all field sampling events and include observations made at each sample location. Field notes will include information specific to the sample media as follows:

- Groundwater Samples – comments on the observed characteristics of the sample (e.g. colour, turbidity, odour, sheen) and reported field water quality parameters (pH, EC, DO, ORP, temperature) will be recorded at regular intervals
- Surface Water Samples – comments on the observed characteristics of the sample (e.g. colour, turbidity, odour, sheen), relative flow velocity, descriptions of water body, channel width, and field water quality parameters (pH, EC, DO, ORP, temperature) will be recorded
- Biota samples – comments on field conditions (weather, tidal movements) and the observed characteristics of the sample

The geo-coordinates for each sample location will be noted. The location of quality control (e.g. duplicate and inter-laboratory duplicate) sample collection points will also be noted.

AECOM's tablet-based Environmental Data Collection and Analysis ('EDCA') tool or ALS' phone/tablet based data collection tool, Compass, will be utilized by field staff to capture consistent field data based on project specific requirements, minimise potential data transcription errors, allow on-the-spot identification of potentially erroneous data in comparison to historical data and facilitate efficient data transfer to multiple data systems including ESdat.

4.17.2 Sample labels

Sample containers will be labelled, as a minimum, with the following information:

- AECOM project number
- Name of sampler
- Sample ID
- Date of sample collection
- Filtered vs non-filtered (for water samples only).

An indelible felt pen will be used for labelling, to ensure that the lettering is not erased during transit to the laboratory.

AECOM will utilize the tablet-based EDCA tool or ALS' phone/tablet based data collection tool, Compass, to streamline sample labelling and chain of custody (CoC) creation to ensure compliant sample IDs are used in the field.

4.17.3 Chain of custody forms

A CoC form will be completed, documenting the sample identification number and analytes. The CoC documents the chain of events from sample collection to delivery at the laboratory and provides a traceable account of sample handling. The CoC form will be signed by both the sample collector and the receiving laboratory.

The CoC form will include the following information:

- Job number (Note: the name of the site is not identified for confidentiality purposes)
- Date and time of sample collection
- Sample ID
- Type of containers
- Name of sampler
- Laboratory to be used
- Analyses required
- Any comments
- Signatures of the sampler and laboratory receiver.

In the event that additional samples are collected during the field investigations due to observations made by the field team, (i.e. samples not proposed in this SAQP), Defence will be provided the rationale for collection of those samples and proposed laboratory analyses. Defence approval will be sought to include these samples on the CoC and to dispatch these samples to the laboratory.

Upon receipt of the original documents accompanying the samples at the laboratory, the laboratory will provide a sample receipt document (noting the temperature of samples upon receipt, analyses required and any non-conformances) and return the signed CoC form to confirm analyses to be performed and the due date for the analytical results.

4.17.4 Sampling documentation

Field sampling sheets will be completed for each location, and will include the following information (as appropriate for the media being sampled):

- name of sampler
- sample location
- date /time of monitoring/ sampling
- sampling method
- observations of the sampled media
- calibration records.

Records of all equipment calibration will be included in the Sampling Event Factual Reports.

4.18 Reporting

4.18.1 Sampling event factual report

No later than four weeks following the completion of each sampling event, AECOM will prepare and submit a Sampling Event Factual Report to Defence. A sampling event is defined as all sampling activities occurring in association with a PMAP defined season (i.e. end of dry / start of wet season), which can include groundwater, surface water, and / or biota sampling occurring at different times throughout a specified season as is appropriate for each sampling type.

Each Sampling Event Factual Report will include:

- details of the scope of monitoring completed.

- a description of the sampling methodologies used.
- a summary of observations made while sampling (e.g. any visual or olfactory observations that may indicate impacts to surface water or groundwater).
- a summary of any changes to the monitoring network condition that may affect data integrity, or require rectification works, and recommendations for repair, replacement of decommissioning of a location.
- a presentation of the analysis results in a table that includes comparisons with PFAS guidelines, highlighting any significant statistical deviations from historical monitoring and investigation data.
- a presentation of the reduced groundwater levels for the event on a figure with inferred contours and inferred groundwater flow direction.
- discussion of the analytical data quality, including review of the quality control sampling results and laboratory quality control data.
- inclusion of the following information as attachments:
    - Groundwater, surface water and biota sampling forms including field water quality parameter measurements
    - Chain of custody forms
    - figures
    - tables
    - Laboratory analytical certificates
    - Equipment calibration certificates.

4.18.2 Annual monitoring and management report

At the end of each 12-month monitoring period, AECOM will prepare and submit an Annual Interpretive Report to Defence. Each Interpretive Report will include:

- evidence of compliance with the requirements of the SAQP and meeting stated objectives of the OMP (Coffey, 2019a).
- relevant figures depicting sampling locations and site-specific hydrogeological features.
- laboratory results and analysis including comparison with relevant screening criteria as identified in each OMP (Coffey, 2019a).
- assessment and commentary on appropriate QA/QC procedures.
- a review of the Conceptual Site Model and provision of a revised Conceptual Site Model if required.
- data interpretation, including trends in groundwater concentration, gradient and flow directions.
- assessment of statistically based trends that may inform decision making when it comes to the revision of an OMP (Coffey, 2019a).
- a statement as to whether the risk profile has changed overall, or for any specific location at the Site, and a recommendation as to whether this should trigger an OMP (Coffey, 2019a) and/or PMAP (Coffey, 2019a) review, or other action.

Following sampling occurring on Darwin International Airport controlled property, a letter report will be provided to Defence to send to Darwin International Airport management. This letter report will not be included in any other report and are strictly for communicating results to Darwin International Airport regarding results from samples collected from the individual stakeholders' properties. OMP Review

4.18.3 OMP review

Review of ongoing management at the Base for the release to the government and public stakeholders. The report should contain the following information:

- identification of improvements to the OMP (Coffey, 2019a) procedures in light of observed variability or concentration changes.
- review of data gaps and nomination of measures to address significant gaps.
- review of Changes in Australian or international practice and guidance in PFAS investigation.
- reporting of changed conditions that require mitigation or warrant review of risk assessments.

4.19 Deviations from OMP

While the scope of works and methodology described in this SAQP are generally consistent with that presented in the OMP (Coffey, 2019a), a number of points of deviation are noted (refer to **Table 20** below).

Table 20 Deviations from OMP

No.	Description	Rationale
1	Adoption of Revised Recreational Screening Criteria for PFOS+PFHxS and PFOA (2019)	Following the release of the OMP (Coffey, 2019a) in July 2019, the National Health and Medical Research Council (NHMRC), published guidance on PFAS in Recreational Water. The adopted screening criteria for PFOS+PFHxS and PFOA in surface water have therefore been revised to 2 µg/L and 10 µg/L, respectively. This is reflected in Section 4.13.
2	Sampling of groundwater and surface water for the non-PFAS suite (Department of Defence 2022). (2021)	Defence notified the AECOM project management team via email on 27th January 2021 that "*all future OMP sampling events across all sites, the inclusion of non-PFAS analysis will need to be justified in advance and agreed by Defence Tech Policy through review of the SAQP*".
2	Sampling of monitoring location MW190 (2021)	Monitoring location MW193 was destroyed during construction activities related to road improvements north of DIA. MW190 was determined to be the best existing alternative location to replace MW193.
3	Sampling of monitoring location SW152 (2021)	Monitoring location SW101 has been made inaccessible through the installation of a security fence surrounding the airfield areas of RAAF Base Darwin. As such, the closest accessible point to collect surface water samples from upper Rapid Creek downgradient of the runway areas is SW152.
4	Sampling of monitoring location MW405 (2021)	Monitoring location MW405 was destroyed during construction activities related to the AIR7000 redevelopment project. MW215 was determined to be the best existing alternative location to replace MW405.
5	Sampling of monitoring locations MW451, MW452, MW453 and MW454 (2022)	Defence notified the AECOM project management team with the recommendation to include four new monitoring wells to the OMP (Coffey, 2019a) scope of work to address identified data gaps and recommendations from previous sampling rounds. The proposed wells will be sampled biannually, at the end of the wet season (March) and the end of the dry season (Oct - Dec).

No.	Description	Rationale
6	Increased sampling frequency of existing monitoring locations SW109 and SW170 (2022)	Defence notified the AECOM project management team with the recommendation to conduct additional sampling of existing locations to address identified data gaps and recommendations from previous sampling rounds. Monthly sampling of SW170 and SW109 must be undertaken throughout the wet season (Dec – April). Monthly samples must also be recorded for SW109 during June and August.
7	Additional surface water location SW300 (2022)	Defence notified the AECOM project management team with the recommendation to include one additional surface water locations to the OMP (Coffey, 2019a) scope of works to address identified data gaps and recommendations from previous sampling rounds.
8	Additional surface water location SW312 (2022)	Defence notified the AECOM project management team with the recommendation to include one additional surface water locations to the OMP (Coffey, 2019a) scope of works to address identified data gaps and recommendations from previous sampling rounds.

5.0 References

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AS/NZ 5667.1 *Water Quality Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handing of samples*.

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National Health and Medical Research Council (NHMRC) (2019). Guidance on PFAS in Recreational Water. August 2019

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Appendix A

Schedule

RAAF Base Darwin Sampling Schedule

			Wet Season					Dry Season						
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RAAF Darwin	Fieldwork	Groundwater			Biannual end of wet season On-Base/ Off-Base							Biannual end of dry season On-Base/ Off-Base		
		Surface Water			End of wet season Off-Base / On-Base									Start of wet season Off-Base / On-Base
			Monthly wet season Off-Base/On-Base	Monthly wet season Off-Base/On-Base	Monthly wet season Off-Base/On-Base	Monthly wet season Off-Base/On-Base								Monthly wet season Off- Base / On-Base
								1st monthly dry season sampling Off-Base		2nd monthly dry season sampling Off-Base				
		Aquatic Biota										Annual Aquatic Biota Off-base		

Appendix B

Figures

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DATUM GDA 1994, PROJECTION MGA ZONE 52

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Kilometres

1:45,000 (when printed at A3)

LEGEND

- RAAF Base Darwin
- Source Area
- Management Area
- Drainage
- Highway

ID	Inferred PFAS Source Area
01	Former Fire Training Ground 1
02	Former Fuel Farm 5
03	Former Fuel Farm 4
04	Former Fuel Farm 6
05	AFFF Contaminated Soil Stockpiles
06	Former ARFF Fire Station
07	Hanger 31
08	Former Fuel Farm 1
09	Former RAAF Fire Station
10	Former Fire Training Ground 2
11	Current Fire Training Ground

Data sources:

Base Data: Imagery (c) 2017 Esri

Department of Defence
RAAF BASE DARWIN
SAMPLING ANALYSIS QUALITY PLAN

2022 PFAS Management Area

PROJECT ID 60612561
CREATED BY [redacted]
LAST MODIFIED [redacted]9 DEC 2022
VERSION: 1

Figure
1

A3 size

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Filename: \\na.aecomnet.com\LFS\APAC\Darwin-AUDWN1\Legacy\Projects\606x\60612561\900_CAD_GIS\920_GIS\60612561_Darwin_Def\02_MXDs\RAAF_Darwin\2022\SAQP\60612561_Darwin_SAQP\60612561_Darwin_SAQP.aprx

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DATUM GDA 1994, PROJECTION MGA ZONE 52

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Kilometres

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LEGEND

- RAAF Darwin Airside Zone
- RAAF Base Darwin
- Watercourses
- Bi-annual Monitoring Locations

Note:
Biannual sampling consists of biannual end of wet season On-Base/Off-Base sampling event and biannual end of dry season On-Base/Off-Base sampling event.

Data sources:

Base Data: Imagery (c) 2017 ESRI

Department of Defence
RAAF BASE DARWIN
SAMPLING ANALYSIS QUALITY PLAN

On-going Monitoring Plan Groundwater

PROJECT ID	60612561
CREATED BY	[redacted]
LAST MODIFIED	[redacted] 19 DEC 2022
VERSION:	2

Figure 2

A3 size

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DATUM GDA 1994, PROJECTION MGA ZONE 52

0 0.2 0.4 0.6 0.8 1

Kilometres

1:30,000 (when printed at A3)

LEGEND

- RAAF Base Darwin
- RAAF Darwin Airside Zone
- Watercourses
- Surface Water Sample Locations

Note:
- Biannual sampling consists of biannual end of wet season On-Base/Off-Base sampling event and biannual end of dry season On-Base/Off-Base sampling event.
- Monitoring locations SW170, SW300 and SW312 sampled monthly from December through April.
- Monitoring location SW109 sampled monthly from December through April, and in June and August.

Data sources:

Base Data: Imagery (c) 2017 ESRI

Department of Defence
RAAF BASE DARWIN
SAMPLING ANALYSIS QUALITY PLAN

ON-GOING MONITORING PLAN
SURFACE WATER

PROJECT ID 60612561
CREATED BY [redacted]
LAST MODIFIED 19 DEC 2022
VERSION: 2

Figure 3

A3 size

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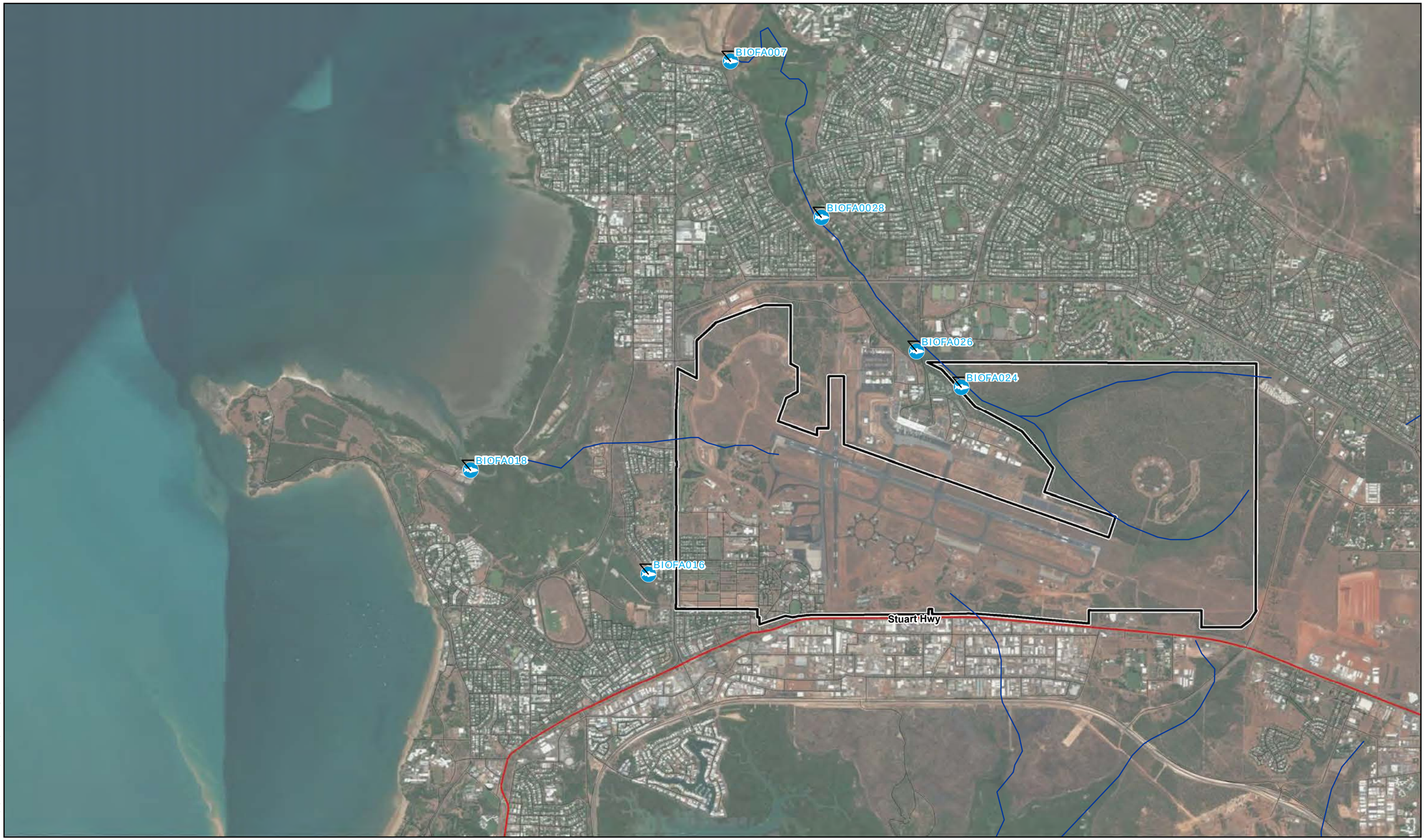
Filename: \\na.aecomnet.com\LFS\APAC\Darwin-AUDWN1\Legacy\Projects\606x\60612561\900_CAD_GIS\920_GIS\60612561_Darwin_Def\02_MXDs\RAAF_Darwin\2022\SAQP\60612561_Darwin_SAQP\60612561_Darwin_SAQP.aprx Layout: 60612561_F03_RAAFDarwin_SurfacewaterLocationsA3L



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DATUM GDA 1994, PROJECTION MGA ZONE 52

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Kilometers

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Legend

- Annual biota sample locations
- Watercourse
- Highway
- Road
- RAAFBaseDarwin_SiteBoundary

Data sources:

Base Data: Imagery (c) 2017 ESRI

Department of Defence
RAAF BASE DARWIN
SAMPLING ANALYSIS QUALITY PLAN

ON-GOING MONITORING PLAN
BIOTA

PROJECT ID	60612561
CREATED BY	
LAST MODIFIED	BathurstJ29 Oct 2019
VERSION:	1

Figure
4

Filename: G:\TSV_GIS\Projects\60612561_Darwin_Def\02_MXDs\RAAF_Darwin\60612561_F03_RAAFDarwin_BiotaSamplingLocationsA3L.mxd

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Appendix C

Monitoring Location Tables

Table 1 RAAF Base Darwin GW Locations

Location Code	Historical location ID	On/Off Base	Location	Methodology	Frequency	Easting	Northing	Latitude	Longitude	Alternative	Rationale/Description
MW215	201_MW04	On-Base	Former Fuel Farm 1	Hydrasleeve	biannual	702819	8626602	-12.4172	130.8657	MW121	Monitoring PFAS in source area Former Fuel Farm 1 and Hanger 31
MW297	206_MW05	On-Base	Former Fuel Farm 5	Hydrasleeve	biannual	705346	8626031	-12.4222	130.889	MW296 (206_MW04)	Monitoring PFAS within source area Former Fuel Farm 5
MW303	207_MW04	On-Base	Former Fuel Farms 4 & 6	Hydrasleeve	biannual	704505	8626192	-12.4208	130.8813	MW302 (207_MW05)	Monitoring PFAS within source area Former Fuel Farms 4 & 6
MW422	-	On-Base	Former Fire Training Area 1	Hydrasleeve	biannual	705841	8625904	-12.4233	130.8936	MW235 *(241_MW02)*	Monitoring PFAS in source area Former Fire Training Area 1
MW240	243_MW02	On-Base	Current Fire Training Area	Hydrasleeve	biannual	702895	8628227	-12.4025	130.8663	Reinstall	Monitoring PFAS in source area Current fire training area
MW241	243_MW03	On-Base	Current Fire Training Area	Hydrasleeve	biannual	702933	8628267	-12.4021	130.8667	Reinstall	Monitoring PFAS down-gradient of Current fire training area
MW103		On-Base	RAAF Fire Station	Hydrasleeve	biannual	702482	8626317	-12.4198	130.8627	MW100	Monitoring PFAS in source area RAAF Fire Station
MW107		On-Base	Down-gradient of Hangar 31	Hydrasleeve	biannual	702589	8626487	-12.4183	130.8636	MW108	Monitoring PFAS from source area Hangar 31
MW112		On-Base	North of Former Fuel Farm 5	Hydrasleeve	biannual	705525	8626321	-12.4196	130.8907	Reinstall	Monitoring PFAS on plume centreline from Former Fuel Farm 5
MW115		On-Base	Former ARFF Fire Station	Hydrasleeve	biannual	704057	8626597	-12.4172	130.8771	MW116	Monitoring PFAS within source area Former ARFF Fire station
MW128		On-Base	Down-gradient of RAAF Fire Station	Hydrasleeve	biannual	702076	8625981	-12.4229	130.859	Reinstall	Monitoring PFAS migrating down-gradient from source area Former RAAF fire station
MW133		On-Base	Former Fuel Farms 4 & 6	Hydrasleeve	biannual	704706	8626110	-12.4215	130.8831	MW292 (205_MW04)	Monitoring PFAS in groundwater in source area Former Fuel Farm 4 & 6
MW139		On-Base	Former Fire Training Area 1	Hydrasleeve	biannual	705834	8625786	-12.4244	130.8935	reinstall	Monitoring PFAS leaving Former Fire Training Area 1 to the south
MW141		On-Base	Southern boundary of site	Hydrasleeve	biannual	705231	8625727	-12.425	130.888	MW231 (234_MW04)	Monitoring PFAS migrating south off the Base
MW144		On-Base	Southern boundary of site	Hydrasleeve	biannual	704150	8625760	-12.4247	130.878	MW143	Monitoring PFAS migrating south off the Base
MW148		On-Base	Western boundary of site	Hydrasleeve	biannual	701820	8626390	-12.4192	130.8566	MW201	Monitoring PFAS migrating off- Base to the west
MW156		On-Base	Rapid Creek - Eastern end	Hydrasleeve	biannual	706047	8626483	-12.4181	130.8954	reinstall	Monitoring PFAS in groundwater prior to discharge to Rapid Creek
MW205		On-Base	North of Former Fuel Farms 4 & 6	Hydrasleeve	biannual	704626	8626589	-12.4172	130.8824	reinstall	Monitoring PFAS in plume centreline from source area Former Fuel Farms 4 & 6
MW451		On-Base	On-Base - west	Hydrasleeve	biannual	701817	8626496	-12.4182	130.8565	reinstall	Monitoring PFAS in groundwater across the western boundary
MW452		On-Base	On-Base - west	Hydrasleeve	biannual	701819	8626284	-12.4201	130.8565	reinstall	Monitoring PFAS in groundwater across the western boundary
MW453		On-Base	On-Base – north west	Hydrasleeve	biannual	702876	8628268	-12.4021	130.8661	reinstall	Monitoring PFAS flux to the north at the CFTA
MW454		On-Base	On-Base – south east	Hydrasleeve	biannual	705845	8626072	-12.4218	130.8936	reinstall	Monitoring PFAS plume from the centreline down-gradient of the FFTA1
MW176		Off-Base	Off-Base-south	Hydrasleeve	biannual	703244	8625346	-12.4285	130.8697	reinstall	Monitoring PFAS plume extent off- Base
MW180		Off-Base	Off-Base-south	Hydrasleeve	biannual	705497	8625510	-12.4269	130.8904	reinstall	Monitoring PFAS plume extent off- Base
MW185		Off-Base	Off-Base north	Hydrasleeve	biannual	703156	8629359	-12.3923	130.8687	MW189	Monitoring PFAS plume extent off- Base
MW191		Off-Base	Rapid Creek	Hydrasleeve	biannual	703586	8628730	-12.3979	130.8727	reinstall	Monitoring PFAS in groundwater prior to discharge to Rapid Creek
MW190		Off-Base	Rapid Creek	Hydrasleeve	biannual	703954	8628326	-12.4016	130.8762	reinstall	Monitoring PFAS in groundwater prior to discharge to Rapid Creek
MW194		Off-Base	Rapid Creek	Hydrasleeve	biannual	705424	8627115	-12.4124	130.8897	reinstall	Monitoring PFAS in groundwater prior to discharge to Rapid Creek
MW195		Off-Base	Rapid Creek	Hydrasleeve	biannual	705167	8627448	-12.4094	130.8873	reinstall	Monitoring PFAS in groundwater prior to discharge to Rapid Creek
MW197		Off-Base	Former Fire training area 2 (DIA)	Hydrasleeve	biannual	703181	8627940	-12.4051	130.869	MW236 (242_MW02)	Monitoring PFAS in groundwater at source area Former Fire training area 2
MW200		Off-Base	Off-Base-south	Hydrasleeve	biannual	704087	8625327	-12.4286	130.8775	reinstall	Monitoring PFAS plume extent off- Base
MW209		Off-Base	Off-Base-south	Hydrasleeve	biannual	702102	8625716	-12.4253	130.8592	reinstall	Monitoring PFAS plume extent in the Narrows (off-Base)
MW210		Off-Base	Off-Base-west	Hydrasleeve	biannual	701389	8626600	-12.4173	130.8526	reinstall	Monitoring PFAS in Ludmilla (off Bagot/ -Base plume)
MW211		Off-Base	Off-Base south west	Hydrasleeve	biannual	704262	8624939	-12.4321	130.8791	reinstall	Monitoring PFAS plume extent off-Base

Table 2 RAAF Base Darwin SW Locations

Location Code	On/Off Base	Location	Frequency	Easting	Northing	Latitude	Longitude	Rationale/Description
SW104	Off-Base	Rapid Creek – Upstream of Weir	Biannually	705089	8627606	-12.408	130.8866	Monitoring PFAS within Rapid Creek
SW106	Off-Base	Rapid Creek - Weir	Biannually	704584	8627963	-12.4048	130.8819	Monitoring PFAS within Rapid Creek
SW108	Off-Base	Rapid Creek - Near Henry-Wrigley Drive	Biannually	704144	8628317	-12.4016	130.8778	Monitoring PFAS within Rapid Creek
SW109	Off-Base	Rapid Creek - Near McMillan's Road	Monthly Dec - Apr and once in June and August	703587	8628927	-12.3961	130.8727	Monitoring PFAS within Rapid Creek
SW112	Off-Base	Rapid Creek - Pipe-track	Biannually	702788	8630605	-12.381	130.8652	Monitoring PFAS within Rapid Creek
SW113	Off-Base	Rapid Creek - Fishing Platform	Biannually	702326	8631150	-12.3761	130.8609	Monitoring PFAS within Rapid Creek
SW114	Off-Base	DIA drain to Rapid Creek - Near Dogs home	Biannually	704995	8627526	-12.4087	130.8857	Monitoring PFAS contribution from DIA entering Rapid Creek
SW115	Off-Base	DIA drain to Rapid Creek	Biannually	704644.3	8627637	-12.4077	130.8825	Monitoring PFAS contribution from DIA entering Rapid Creek
SW168	Off-Base	DIA drain to Rapid Creek - off Charles Eaton Drive	Biannually	703865	8628388	-12.401	130.8753	Monitoring PFAS contribution from DIA entering Rapid Creek
SW120	Off-Base	Ludmilla Creek (Dick Ward Drive)	Biannually	701051.6	8626476	-12.4185	130.8495	Monitoring PFAS within Ludmilla Creek
SW124	Off-Base	Ludmilla Creek (Boat Ramp)	Biannually	699712.9	8627188	-12.4121	130.8372	Monitoring PFAS within Ludmilla Creek
SW125	Off-Base	Ludmilla Creek (Accessible Drain)	Biannually	701522	8626133	-12.4215	130.8539	Monitoring PFAS discharging off-Base to Ludmilla Creek
SW132	Off-Base	Top of Reichardt Creek east arm	Biannually	706204.2	8624362	-12.4372	130.897	Monitoring PFAS discharging to Reichardt Creek
SW133	Off-Base	Top of Reichardt Creek west arm	Biannually	705026	8624335	-12.4376	130.8862	Monitoring PFAS discharging to Reichardt Creek
SW143	Off-Base	Drain to Sadgroves Creek	Biannually	702406	8624854	-12.433	130.8621	Monitoring PFAS discharging to Sadgroves Creek
SW300	Off-Base	Off-Base – Located on Osgood Drive	Monthly Dec - Apr	703323.2	8628768.7	-12.3975	130.8702	Monitoring PFAS in surface water coming from sub-surface perched flow from CFTA
SW152	On-Base	Rapid Creek – Headwater south arm	Monthly Dec - Apr	706234	8626124	-12.4213	-12.4213	Monitoring PFAS within Rapid Creek
SW156	On-Base	On-Base – Current fire training ground	Biannually	702904	8628401	-12.4009	130.8664	Monitoring surface water flow from the current fire training area
SW160	On-Base	On-Base – stormwater pipe from Airside operations	Biannually	702276	8626280	-12.4201	130.8608	Monitoring PFAS in on-Base stormwater pipe
SW162	On-Base	On-Base – southern boundary	Biannually	703449	8625753	-12.4248	130.8716	Monitoring PFAS in stormwater leaving the Base to the south
SW170	On-Base	On Base - Eastern end of runway	Monthly Dec - Apr	706189	8626092	-12.4216	130.8968	Monitoring PFAS in surface water drains coming from key on-Base source areas
SW178	On-Base	On Base - Drain near Former Fuel Farm 5	Biannually	705274.3	8626083	-12.4217	130.8884	Monitoring PFAS in surface water drains coming from key on-Base source areas
SW181	On-Base	On Base - Main drain to the north of Former Fuel Farms 4 & 6	Biannually	704773.8	8626170	-12.421	130.8838	Monitoring PFAS in surface water drains coming from key on-Base source areas
SW312	On-Base	On Base - Drainage from FFTA 1	Monthly Dec - Apr	706030.5	8625939.5	-12.4229	130.8953	Monitoring PFAS in surface water coming from FFTA 1

Table 3 RAAF Base Darwin BIOTA Locations

Location	Location Code	On/Off Base	Easting	Northing	Longitude	Latitude	Rationale/Description	Indicator/Target Species	Target sample numbers
Rapid Creek – (Freshwater) - Upstream of Trower Road	BIOFA024 or	Off-Base	704584	8627963	130.8819	-12.4048	Monitoring PFAS within Rapid Creek	Redclaw Crayfish	Minimum three of at least 100g
	BIOFA026 or	Off-Base	704144	8628315	130.8778	-12.4016			
	BIOFA028	Off-Base	702982	8629697	130.8692	-12.3899			
Ludmilla Creek (Estuarine area)	BIOFA016	Off-Base	701522	8626133	130.8539	-12.4215	Monitoring PFAS within Ludmilla Creek	Molluscs	Five composite samples of 10 molluscs
Rapid Creek mouth (Casuarina Drive)	BIOFA007	Off-Base	702326	8631150	130.8609	-12.3761	Monitoring PFAS within Rapid Creek	Fish	Three samples of each of 5 species of commonly consumed fish (15 total)
Ludmilla Creek Boat Ramp	BIOFA018	Off-Base	699783	8627150	130.8378	-12.4124	Monitoring PFAS within Ludmilla Creek	Fish	Three samples of each of 5 species of commonly consumed fish (15 total)

Prepared for
Department of Defence, Directorate of PFAS Remediation, Environment and Engineering Branch
ABN: 68706814312

AECOM

Dry Season Sampling Event Factual Report 2023

PFAS OMP - RAAF Base Darwin

29-Jan-2024
PFAS Ongoing Monitoring Plan

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Dry Season Sampling Event Factual Report 2023

PFAS OMP - RAAF Base Darwin

Client: Department of Defence, Directorate of PFAS Remediation, Environment and Engineering Branch

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Abbreviations

Abbreviation	Term
AECOM	AECOM Australia Pty Ltd
ALS	ALS Environmental Pty Ltd
ANZG	Australian and New Zealand Guidelines
ASC NEPM	National Environment Protection Council 1999, National Environment Protection (Assessment of Site Contamination) Measure, Amendment 1 2013
BOM	Bureau of Meteorology
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
DoH	Department of Health
DIA	Darwin International Airport
DQOs/DQIs	Data quality objectives/Data quality indicators
EC	Electrical conductivity
HEPA	Heads of Environment Protection Authority
LOR	Limit of reporting
LNAPL	Light Non-Aqueous Phase Liquid
MW	Monitoring Well
NATA	National Association of Testing Authorities
NEMP 2.0	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
NSW	New South Wales
NT	Northern Territory
OMP	Ongoing Monitoring Plan
OMR	Ongoing Monitoring Report
ORP (Redox)	Oxidation-reduction potential
PFAS	Per- and poly-fluoroalkyl substances
PFHxS	Perfluorohexane sulfonate.
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate

Abbreviation	Term
PMAP	PFAS Management Area Plan
QA/QC	Quality Assurance and Quality Control
RAAF	Royal Australian Air Force
RPD	Relative percentage difference
SAQP	Sampling and Analysis Quality Plan

List of Units

Unit	Definition	Unit	Definition
°C	Degrees Celsius	mbtoc	metres below top of casing
cm	Centimetre	mg	Miligrams
g	Grams	mV	Millivolts
kg	Kilograms	µg	Micrograms
L	Litre	µS	Microsiemens
m	Metre	NTU	Nephelometric Turbidity Unit
mm	Millimetre	mbgl	Metres below ground level
mAHD	meters Australian Height Datum		

1.0 Introduction

1.1 Preamble

AECOM Australia Pty Ltd (AECOM) was engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) outlined in the *PFAS Management Area Plan (PMAP)* (Department of Defence, 2019a) at the Royal Australian Air Force (RAAF) Base Darwin (the 'Base') in the Northern Territory (NT). The location of the Base and Management Area is shown in Appendix A – Figure 1. The OMP (Department of Defence, 2019a) for the Base outlines the requirement to complete biannual groundwater, biannual surface water sampling and annual biota.

The primary purpose of the OMP is to monitor changes to the PFAS impact in groundwater and surface water pathways associated with sources of PFAS as initially assessed through the detailed site investigation phase of works. Changes may result from the specific or cumulative impact of remediation or containment actions, existing transportation trends, and changes to hydrogeology or weather events.

The monitoring program at the Base includes a regime of groundwater, surface water and biota sampling to capture these changes in the long term, to enable Defence to maintain an up-to-date understanding of temporal and spatial distribution, concentration, and transport of PFAS contaminants.

The most recent PFAS OMP approved in 2019 that is covered within the PMAP (Department of Defence, 2019a), outlines the requirement to conduct annual biota sampling, biannual groundwater sampling and surface water sampling up to four times a year as presented in Table 1 below.

Table 1 Annual sampling schedule with dry season sampling highlighted in yellow.

Sampling	Wet Season				Dry Season						Wet Season	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Groundwater			Biannual							Biannual		
Surface Water			End of Wet									Start of Wet
	Monthly in Wet	Monthly in Wet	Monthly in Wet	Monthly in Wet								Monthly in Wet
						Twice in Dry		Twice in Dry				
Aquatic Biota										Annual Biota		

1.2 Objectives

The purpose of this factual report is to summarise the scope of works and findings from the dry season sampling works conducted between August 2023 and October 2023. The planned works included:

- Twice in dry season surface water sampling during June and August 2023 in accordance with the Sampling Analysis and Quality Plan (SAQP), Revision 2 (AECOM, 2023a).
- Biannual groundwater sampling in October 2023 in accordance with the SAQP, Revision 3 (AECOM, 2023b).
- Annual aquatic biota sampling in October 2023 in accordance with the SAQP, Revision 3 (AECOM, 2023b).

This report has been prepared in accordance with the Defence's PFAS OMP Factual Report Guidance, (Department of Defence, 2021b).

An Ongoing Monitoring Report (OMR) is to be subsequently developed for the purpose of assessing the data collected during the discrete monitoring events completed over the 12-month period within which

the works detailed herein fall and will include assessment of environmental variability and statistically significant trends in PFAS concentrations.

2.0 Scope of Work

2.1 Overarching scope

The 2023 dry season sampling events were completed in general accordance with the SAQP (AECOM, 2023b); see Section 2.3 for deviations from the SAQP. Prior to commencement of the sampling events, the SAQP (AECOM, 2023b) was reviewed to ensure compliance with the following:

- The OMP (Department of Defence, 2019a).
- PFAS National Environmental Management Plan (NEMP 2.0) (HEPA, 2020).
- National Environment Protection Council 1999, National Environment Protection (Assessment of Site Contamination) Measure, Amendment 1 2013 (ASC NEPM, 2013).
- Defence Routine Environment Water Quality Monitoring Manual (Department of Defence, 2019b).
- AS/NZ 5667:1998 Water quality – Sampling (AS/NZS, 1998).
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018).
- Relevant Territory regulatory guidelines.

The scope of works completed for the dry season sampling events included:

- Surface water sampling of one 'twice in dry season' location in August 2023 (refer to Table 2 and Appendix A – Figure 2 for the specific location).
- Gauging and groundwater sampling of 28 biannual locations (refer to Table 3 below and Appendix A – Figure 3 for specific locations).
- Collection of aquatic biota samples from six annual locations (refer to Table 4 below and Appendix A – Figure 5 for specific locations).
- Collection of relevant quality assurance and quality control samples (QA/QC).
- Analysis of all samples for a suite of 28 PFAS analytes at the standard limit of reporting (LOR).
- Data management of the OMP field and laboratory data in the Defence ESdat database.
- Preparation of this Sampling Event Factual Report.

2.2 Monitoring locations

The monitoring locations outlined within the relevant SAQP (AECOM, 2023b) for the dry season sampling events are tabulated below. Deviations from the planned sampling are highlighted in **bold** and detailed in Section 2.3 below.

Table 2 Twice in dry season surface water location for June and August 2023 (AECOM, 2023b)

Area	Description	Sampling locations
Off Base	Rapid Creek	**SW109**

Table 3 Biannual groundwater sampling locations sampled in October 2023 (AECOM, 2023b)

Area	Description	Sampling locations
OnBase	Former Fuel Farm 1	MW215
	Former Fuel Farm 5	MW297, **MW112*****
	Former Fuel farms	MW303, MW133, MW205
	Former Fire Training Area 1	**MW422***, MW139

Area	Description	Sampling locations
	Current Fire Training Area	**MW240****, **MW241****
	RAAF Fire Station	MW103
	Former ARFF Fire Station	MW115
	Source area downgradient transect	MW107, MW128
	Southern boundary of Base	MW141, MW144
	Western boundary of Base	MW148
	Rapid Creek – Eastern end	MW156
	Western boundary of Base	MW451, MW452
	Current Fire Training Area	**MW453****
	Former Fire Training Area 1	MW454
Off Base	Former Fire Training Area 2, Darwin International Airport (DIA)	**MW197****
	Off-Base (north)	MW185
	Rapid Creek	MW190, MW191, MW194, MW195
	Off-Base (south)	MW176, MW180, MW200, MW209
	Off-Base (southwest)	MW211
	Off-Base (west)	MW210

* Contingency location MW235 gauged in lieu of MW422 due to no access, but not sampled due to damage.

** Wells gauged dry and were not sampled.

*** Wells inaccessible due to the site being buried by earthworks occurring in the area

Table 4 Annual biota sampling locations (AECOM, 2023b)

Area	Description	Sampling locations	Indicator/target capture
Off Base	Rapid Creek Freshwater – Upstream of Trower Road	BIO024, BIO026, BIO028	Crustaceans
	Ludmilla Creek – Estuarine area	BIO016	Molluscs
	Rapid Creek mouth – Casuarina Drive	BIO007	Diadromous or estuarine fish
	Ludmilla Creek – Boat Ramp	BIO018	Diadromous or estuarine fish

2.3 Deviations from the SAQP

The works completed during the dry season sampling events included some deviations from the SAQP as outlined below in Table 5

Table 5 Deviations from the SAQP during sampling events

SAQP	2023 sampling event	Impact to OMP
Sampling of SW109 twice in dry season	Monitoring location SW109 was not sampled in June 2023.	Minor impact – data gap for June 2023 PFAS concentrations going off Base to Rapid Creek. However, SW109 was sampled during August 2023 event and historical data is available for this location for June in previous years.
Sampling 28 of 34 biannual groundwater locations.	Monitoring location MW112 was not sampled due to runway upgrades. The location is suspected to be underneath earth works.	Minor impact – data for MW112 may have a minor impact on the understanding the concentration changes within the source area. The monitoring well has previously been sampled in the dry season. Furthermore, there are other monitoring locations hydraulically downgradient from this location.
	Monitoring location MW235 was an alternative for MW422 which was dry. MW235 has a bent PVC casing so only gauging results were recorded with no HydraSleeve™ able to be deployed.	Minor impact – data gap for MW235/MW422 may have a minor impact on understanding the concentration changes within the source area. The monitoring well has previously been sampled in the dry season. Furthermore, there are other monitoring locations hydraulically downgradient from this location.
	Monitoring locations MW197 was dry and not able to be sampled. Monitoring location MW236 is the alternative monitoring location for MW197 and was also dry.	Minor impact – data gap for MW197 may have a minor impact on understanding the concentration changes within the source area. The monitoring well has previously been sampled in the dry season. Furthermore, there are other monitoring locations hydraulically downgradient from this location.
	Monitoring location MW240 was dry and not able to be sampled. No alternative monitoring wells are provided within the SAQP for this location.	Minor impact – data gap for MW240 may have a minor impact on understanding the concentration changes within the source area. Furthermore, there are other monitoring locations hydraulically downgradient from this location.
	Monitoring location MW241 presented as dry during the October 2023 sampling event. No alternative monitoring locations are offered for MW241.	Minor impact – data gap for MW241 may have a minor impact on understanding the concentration changes within the source area. Furthermore, there are other monitoring locations hydraulically downgradient from this location.
	Monitoring location MW453 presented as dry and was not able	Minor impact – data gap for MW453 may have a minor impact

SAQP	2023 sampling event	Impact to OMP
	to be sampled. No alternative monitoring locations are offered for this location.	on understanding the concentration changes within the source area. Furthermore, there are other monitoring locations hydraulically downgradient from this location.
	Monitoring location MW128 was gauged and sampled at a later date to other locations due to a delay in obtaining gate keys from Base Management.	No impact - The sampling of MW128 in early November 2023 instead of in October 2023 with the other monitoring locations is not considered to have an impact on the data due to limited recorded precipitation between events and therefore groundwater conditions would still reflect dry season conditions.
Water quality parameter collection for groundwater	The water quality parameter data at monitoring location MW205 for dissolved oxygen was lost due to electronic data collection fault, where the data was not saved and could not be retrieved.	Minor impact - The lack of dissolved oxygen parameters for MW205 is considered to have minimal impact on the data set.
	The water quality parameter data at monitoring location MW128 was misplaced.	Minor impact - The lack of parameter data at monitoring location MW128 is considered to have minimal impact on the data set.
QA/QC for biota sampling	A field blank sample was not collected during the biota sampling event.	Minor impact - A field blank sample was not collected as per the project specifications. The accuracy of the data can be considered acceptable based on available rinsate and trip blank samples that were reported at the required frequencies and within control limits.

3.0 Sampling methodology

The methodology adopted for the dry season sampling events were in accordance with the relevant SAQPs (AECOM, 2023a) (AECOM, 2023b) and is summarised below in Table 6.

Table 6 Sampling methodology

Item	Details
Surface water sampling methodology	
Water quality parameters	Where appropriate, water quality parameters were recorded ex-situ using a calibrated YSI Pro Series water quality meter. Parameters recorded consisted of the following: temperature [degrees Celsius (°C)], electrical conductivity (EC), dissolved oxygen (DO), Redox and pH.Observations of odour, colour, and turbidity of surface water were recorded at each sampling location. Refer to Appendix B – Table 1 for surface water field results and Appendix C for calibration records for the water quality meter and sampling logs.
Sampling methodology	Surface water samples were collected from approximately 0.5m below the surface, when possible. When not possible samples were collected mid-way through the water column to minimise collection of sediment or floating materials in the samples. At SW109 location, a new, laboratory supplied container was lowered into the water, using a decontaminated aluminium sampling pole, with the cap immediately applied once the container was full.
Sample analysis	ALS Sydney, New South Wales (NSW) was used as the primary laboratory. National Measurement Institute (NMI) Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for analyses are certified by the National Association of Testing Authorities (NATA). Chain of custody and laboratory reports are presented in Appendix D.
QA/QC samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples, rinsate, field blank and trip blank samples. Refer to Appendix E for data validation report.
Groundwater sampling methodology	
Groundwater gauging	The depth to groundwater was measured in each monitoring well prior to deploying the HydraSleeve™ using a decontaminated oil/water interface probe.
Water quality parameters	Groundwater water quality parameters were recorded ex-situ, using a daily calibrated YSI Pro Series water quality meter. Parameters recorded included temperature, EC, DO, redox potential and pH. The odour, colour, and clarity (turbidity) of groundwater were recorded at each sampling location. Refer to Appendix B – Table 3 for groundwater field results and Appendix C for calibration records for the water quality meter and the field logs.
Sampling methodology	Groundwater samples were collected from all accessible wells using no-purge methodology HydraSleeves™. All HydraSleeves™ were installed within the screened interval of the well 1 metre below the standing water level for a minimum of 24 hours prior to sampling as stated in the SAQPs (AECOM, 2023a) (AECOM, 2023b).
Sample analysis	ALS Sydney, NSW was used as the primary laboratory. NMI Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for analyses are certified by the NATA. Chain of custody and laboratory reports are presented in Appendix D.
QA/QC samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples, rinsate, field blank and trip blank samples. Refer to Appendix E for data validation report.

Item	Details
Aquatic biota sampling	
Aquatic biota target samples	Target species for each identified sample location were based on those that are recognised as consumed by the public from the following three groups: • Diadromous or estuarine fish (Barramundi, Flathead, Javelin, Sweetlips, Mullet, Rock Cod, Queenfish, Jewfish, etc.) • Molluscs [Longbums (Telescopium) and Whelk] • Crustaceans [Redclaw Crayfish (C. quadricarinatus.)]
Aquatic biota sampling methodology	Sampling was conducted by Eco Logical Australia Pty Ltd and the NT Department of Fisheries between 17 to 25 October 2023. Ethics approvals and Fisheries/Parks & Wildlife licenses were obtained prior to biota sample collection. Estuarine fish were collected using 4-6-inch gill nets set three hours before low tide. Nets were continuously monitored from a small boat and cleared when movement was detected. Any non-target species were released immediately and where targeted biota species were identified, they were measured, weighed and euthanised humanely in accordance with the animal ethics permits conditions. Redclaw were captured using Opera House traps baited with raw beef (purchased from a supermarket). Traps were set overnight in freshwater pools and collected in the early morning. Longbums were hand-collected during low tide from the mangroves. Redclaw and Longbums were rinsed prior to being stored in snap-lock bags, euthanised by freezing and preserved frozen until preparation at NT Department of Fisheries wet room laboratories. Samples were prepared for analysis at the NT Department of Fisheries laboratory prior to dispatching to the primary laboratory. This included the removal of scales/shell, head, and internal organs. Fillets were taken with skin intact and homogenised prior to sub-sampling and analysis. Samples were prepared based on the following procedure: • For Target fish: - Used opened bag as board cover. - Cleaned knife/blade with deionised water. - For large fish the complete tissue samples of edible flesh was collected. - For smaller fish, samples were provided whole with entrails removed. • For Redclaw Crayfish: - Rinsed in deionised water. - Composited whole as 50-100g samples (about 3-5 individuals per sample). • For Longbum: - Shells placed inside a sample bag and carefully smashed with a hammer, then tissue extracted with forceps. - Tissue rinsed with deionised water. - Composited 10 individuals as a sample. The weight, length, species, and location caught were recorded.
Sample analysis	ALS Sydney, NSW was used as the primary laboratory. NMI Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for analyses are certified by the NATA. Chain of custody and laboratory reports are presented in Appendix D.
QA/QC samples	Field QA/QC samples collected included intra- and inter-laboratory duplicates, field and trip blanks. Refer to Appendix E for data validation report of the results.

3.1 Adopted screening criteria

The adopted screening criteria references the PFAS National Environmental Management Plan 2.0 (NEMP 2.0) (HEPA, 2020), Defence estate and environmental strategies, and Defence PFAS-specific

strategies and guidance. At the time of preparing this report, the primary guidance document utilised is the *PFAS National Environmental Management Plan (version 2.0)* (NEMP) (HEPA, 2020). Guidance documents used to assess the dataset includes the following:

- Department of Health, 2019. Health based guidance values for PFAS for use in site investigations in Australia. (Department of Health, 2019).
- Heads of the Environment Protection Authority (HEPA), 2020. PFAS NEMP 2.0. (HEPA, 2020).
- National Health and Medical Research Council (NHMRC), 2019. Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water (NHMRC, 2019).

The screening criteria which have been adopted for groundwater and surface water are presented in Table 7.

Table 7 Summary of adopted water screen criteria for groundwater and surface water

Pathway	Compound	Criteria	Comment/Reference
Human health receptors			
Drinking water	perfluorooctane sulfonate (PFOS) + Perfluorohexane sulfonate.(PFHxS)	0.07 µg/L	These values are from the PFAS NEMP 2.0 (HEPA, 2020). *All surface water and groundwater results will be compared to these criteria.*
	Perfluorooctanoic acid (PFOA)	0.56 µg/L	
Recreational use	PFOS + PFHxS	2 µg/L	The values presented in the PFAS NEMP 2.0 (HEPA, 2020) are from the Guidance on PFAS in Recreational Water (NHMRC, 2019) guidance on the assessment of PFAS in recreational water released in August 2019. *All surface water and groundwater results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological receptors			
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	These values are from the PFAS NEMP 2.0 (HEPA, 2020). The 99% level of protection has been applied for slightly to moderately disturbed ecosystems. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. For the purposes of preliminary screening of analytical water results, the laboratory LOR will be adopted rather than sole use of the criteria value. *All surface water and groundwater results will be compared to these criteria.*
	PFOA	19 µg/L	

Notes: HEPA (2020) notes that the 99% species protection level for PFOS is close to the level of detection. Agencies may wish to apply a 'detect' threshold in such circumstances rather than a quantified measurement. The laboratory PFOS LOR adopted in this report is 0.001 µg/L.

The screening criteria which have been adopted for aquatic biota are presented in Table 8 below.

Table 8 Summary of adopted screening criteria for consumption of aquatic biota.

Pathway	Compound	Criteria*	Comment/reference
Human health receptors			
Crustaceans	PFOS + PFHxS	65 µg/kg	Department of Health (2019) *Derivation: Children 2-6 years, median consumption* Occasionally consumed food. Trigger criteria for investigation for crustaceans apply to molluscs due to the small number of consumers of molluscs.
	PFOA	520 µg/kg	
Finfish	PFOS + PFHxS	5.2 µg/kg	Department of Health (2019). *Derivation: Children 2-6 years, P90 consumption*
	PFOA	410 µg/kg	

*Criteria is presented in mg/kg within Appendix B – Table 5 to match laboratory reporting.

3.2 Data quality objectives and data validation

The data quality objectives (DQOs) and data quality indicators (DQIs) adopted for these works are presented in the SAQP (AECOM, 2023a) (AECOM, 2023b).

Data validation procedures employed in the assessment of the field and laboratory QA/QC data are indicative that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report subject to the following limitations:

- Elevated relative percentage differences (RPDs) should be taken into consideration when interpreting concentrations for PFOS close to guidelines for primary batches ES2337724, ES2338712 and ES2329252.
- The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR for primary samples 1302_MW209_231031 and 1302_MW451_231031. This should be taken into consideration when interpreting data and using data quantitatively.

All data collected during this event has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Department of Defence, 2021a) Annex L requirements.

Full data validation assessment is provided in Appendix E.

4.0 Field observations and results

4.1 Surface water

4.1.1 Field observations and field measurements

Table 9 Surface water observations and field measurements for August 2023 event

Item	Observations and field measurements
Fieldwork dates	The surface water sample and water quality parameters were collected on 30 August 2023.
Access and sample collection	The surface water location was accessible and able to be sampled on 30 August 2023.
Field observations	Rapid creek system had low flows with low turbidity. A cloudy organic sheen was observed on the surface of the water.
Rainfall	No rainfall was recorded at the Darwin Airport during the month of August 2023 (Bureau of Meteorology (BOM), 2023).
Surface water flow	Surface water flow was low in the Rapid Creek system. Upstream of the Rapid Creek system was stagnant with downstream having low observable flow.
Estate works or training activities	During the sampling event, no notable estate works, or training activities were observed in the vicinity of sampling locations.
Water quality parameters	Surface water quality parameters for monitoring location SW109 were measured after the collection of surface water samples. The stabilised readings are presented in Appendix B – Table 1 and are summarised below: • DO was 0.64 mg/L indicating low oxygenated conditions. • EC was 100.6 µS/cm indicating low salinity. • pH was 6.01 indicating slightly acidic conditions. • Redox (corrected) was 257.5 mV indicating reducing conditions.

4.1.2 PFAS surface water analytical results

The August 2023 sample from SW109 reported Sum of PFHxS+PFOS concentration above the laboratory LOR and above the PFAS NEMP 2020 drinking water criteria (ASC NEPM, 2013).

There was no first-time detection of the sum of PFHxS+PFOS or no new exceedances of the selected criteria reported at SW109 for the August 2023 sampling event.

The PFAS surface water analytical results from the August 2023 sampling events are presented in Appendix B – Table 2.

4.2 Groundwater results

4.2.1 Field observations and field measurements

Table 10 Groundwater observations and field measurements

Item	Observations and field measurements
Fieldwork dates	The groundwater sampling was completed on 30 to 31 October 2023.

Item	Observations and field measurements
Access and sample collection	All monitoring wells and bores were accessible and able to be sampled with the exception of the following: • MW422 was not sampled due to a construction site fence blocking access to the monitoring well. The SAQP (AECOM, 2023b) prescribed alternative well MW235, was gauged but not sampled due to the PVC casing being bent and not being able to deploy the HydraSleeve™. • MW112 was inaccessible due to site construction works. No contingency monitoring well is offered in the SAQP (AECOM, 2023b). • MW197 was dry. Contingency monitoring well MW236 was not sampled due to also being dry. • MW240 was dry. No contingency monitoring well is offered in the SAQP (AECOM, 2023b). • MW241 was dry. No contingency monitoring well is offered in the SAQP (AECOM, 2023b). • MW453 was dry. No contingency monitoring well is offered in the SAQP (AECOM, 2023b).
Monitoring well network condition	The monitoring well network was generally in good condition, with the following exceptions: • Contingency MW235 requires casing to be corrected or the well reinstalled. • MW112 is currently buried by earthworks being conducted in the area for Base construction works – if location cannot be rectified in future events, replacement location may be required.
Field observations	Monitoring wells MW133 and MW297 were observed to emit a strong hydrocarbon odour. Notably, MW297 had a 11 mm thickness of a light non-aqueous phase liquid (LNAPL) layer. MW133 had 26 mm of LNAPL.
Depth to groundwater and flow direction	A localised high point is in the centre of the Base, south of the runway, with the groundwater flow radiating from this location. Groundwater in the north and west portions of the Base is inferred to generally flow northwest towards the coast, with localised flow towards Ludmilla Creek on the western boundary of the Base and Rapid Creek north of the Base. Groundwater to the south of the Base is inferred to flow towards Charles Darwin National Park and Francis Bay. Groundwater contours are generally consistent with the Detailed Site Investigation (Coffey, 2018) flow direction. Depth to groundwater was recorded from 29 of 34 monitoring wells visited, ranging from 2.089 (MW190) to 12.991 (MW303) metres below top of casing (mbTOC). Groundwater elevations in the aquifer were between 2.51 (MW185) and 22.19 (MW115) metres Australian Height Datum (mAHD). Groundwater gauging data is presented in Appendix B – Table 3. Inferred groundwater contours and groundwater flow directions at the Base in October 2023 are shown in Figure 4 in Appendix A.
Water quality parameters	The water quality parameters are presented in Appendix B – Table 3 and are summarised below: • DO ranged from 0.84 mg/L (MW303) to 4.68 (MW115) indicating low to moderately oxygenated water. • EC ranged from 41.2 µS/cm (MW139) to 1794 µS/cm (MW209), indicating freshwater conditions. • pH ranged from 4.22 (MW180) to 5.65 (MW303) indicating acidic conditions. • Redox (corrected) ranged from 188.1 mV (MW303) to 398.1 mV (MW211) indicating reducing conditions. Groundwater parameters were measured for MW128, however the data was misplaced.

Item	Observations and field measurements
Estate management works or training activities	During the sampling event, no notable estate works, or training activities were observed in the vicinity of sampling locations with the exception of the following: • Suspected earthworks covering MW112 associated with recent taxiway upgrades.

4.2.2 PFAS groundwater analytical results

During the October 2023 event, all 28 groundwater samples reported concentrations of PFAS above the laboratory LOR with the exception of MW209 and MW451. All groundwater samples for Sum of PFHxS+PFOS were above the PFAS NEMP 2020 drink water criteria (HEPA, 2020). Seventeen groundwater samples for Sum of PFHxS+PFOS were above the PFAS NEMP 2020 recreational use criteria.

There was no first-time detection above the LOR for Sum of PFHxS+PFOS or PFOA, as well as no new exceedances of the selected criteria at any of the monitored locations.

The PFAS groundwater analytical results from the October 2023 sampling event are presented in Appendix B – Table 4**.**

4.3 Biota

4.3.1 Field observations

Table 11 Biota observations

Item	Observation
Field Observations	Sample descriptions were provided by NT Department of Fisheries field staff following the biota sampling event via an excel spreadsheet, noting species type, weight, and number of specimens. These are presented in Appendix B – Table 5 along with the analytical results.
Access and Sample Collection	All monitoring locations were accessible and able to be sampled. Fish and invertebrate species collected and analysed included: **Rapid Creek (BIO007):** • Mangrove Jack (Lutjanus argentimaculatus) • Forktail Catfish 1 (Neoarius sp.1) • Forktail Catfish 2 (Neoarius sp.2) • Banded Archerfish (Toxotes jaculatrix) • Milkfish (Chanos chanos) • Tarpon (Megalops cyprinoides) • Sea Mullet (Mugil cephalus) **Ludmilla Creek (BIOFA016):** • Giant Mangrove Whelk (Terebralia palustris) • Long Bum (Telescopium telescopium) **Ludmilla Creek (BIO018):** • King Salmon (Polydactylus macrochir) • Barramundi (Lates calcarifer) • Queenfish (Scomberoides commersonnianus) • Forktail Catfish 1 (Neoarius sp.1) • Sea Mullet (Mugil cephalus) • Northern Whiting (Sillago sihama) • Sand Crab (Portunus pelagicus) **Rapid Creek (BIO024):** • Redclaw Crayfish (Cherux quadricarinatus) **Rapid Creek (BIO026):** • Redclaw Crayfish (Cherux quadricarinatus)

Item	Observation
	• Cherabin (Macrobrachium spinipes) **Rapid Creek (BIO028):** • Redclaw Crayfish (Cherux quadricarinatus)

4.3.2 PFAS biota analytical results

Results from the October biota sampling event reported 38 of 48 primary samples above the LOR for PFAS, with 15 of 48 primary biota samples reported concentrations of PFAS that exceeded the Department of Health criteria for finfish or crustaceans (Department of Health, 2019). There was no first-time detection of Sum of PFHxS+PFOS within the location areas, nor were there any new exceedance of the selected criteria.

The PFAS biota analytical results are presented in Appendix B – Table 5.

5.0 Summary of current and next sampling events

5.1 Summary of monitoring event

The end of dry season event included surface water, groundwater and aquatic biota sampling between August and October 2023. The program included:

- one 'twice in dry season' surface water sample collected in August 2023
- 28 biannual groundwater samples collected in October 2023
- annual sampling of aquatic biota from six locations along Rapid and Ludmilla Creeks in October 2023.

The findings of the August 2023 surface water sampling event and the recommended actions are summarised in Table 12 below.

Table 12 Summary of surface water sampling events

Item	Comment	Recommended actions
Access to sampling locations	The proposed monitoring location was accessible.	No actions recommended.
Analytical Results	PFAS concentrations were recorded above the LOR for the one primary sample collected.	Ongoing monitoring in accordance with Base-wide PFAS OMP.
New exceedance of PFAS NEMP 2.0 (HEPA, 2020) drinking water guideline values in surface water	No locations reported first-time detections.	No actions recommended.
New exceedance of PFAS NEMP 2.0 (HEPA, 2020) recreational guideline values in surface water	No locations reported first-time detections.	No actions recommended.
First-time detection of PFAS in surface water	No locations reported first-time detections.	No actions recommended.
Sum of PFHxS of PFOS and/or sum of PFAS concentrations show an increasing trend in surface water	This will be evaluated in the OMR.	No actions recommended.
Sum of PFHxS of PFOS and/or sum of PFAS concentrations show a decreasing trend in surface water	This will be evaluated in the OMR.	No actions recommended.

The findings of the October 2023 groundwater sampling event are summarised in Table 13 below.

Table 13 Summary of October 2023 biannual groundwater sampling event

Item	Comment	Recommended actions
Access to sampling locations	All proposed monitoring locations were accessible with the exception of six monitoring wells: • Contingency well MW235 (contingency location for MW422) was gauged, however was unable to be	After completion of construction works in the vicinity of MW112, this well should be relocated and determine if still usable. Replacement may be required if the well remains buried and unlocatable.

Item	Comment	Recommended actions
	sampled due to PVC tubing being bent. • MW240, MW241, MW422, MW453 and MW197 were unable to be sampled due to them presenting as dry. • MW112 was unable to be sampled due to it being suspected to be buried beneath earthworks associated with the upgrade of the taxiway.	MW235 should be investigated for potential repair or decommissioning and replacement. No other actions recommended.
New exceedance of PFAS NEMP 2.0 (HEPA, 2020) drinking water guideline values in groundwater	No locations reported a new exceedance of the drinking water guideline values.	No actions recommended.
New exceedance of PFAS NEMP 2.0 (HEPA, 2020) recreational guideline values in groundwater	No locations reported a new exceedance of the recreational guideline values.	No actions recommended.
First-time detection of PFAS in groundwater	No locations reported first-time detections of Sum of PFHxS+PFOS.or PFOA.	No actions recommended.
Sum of PFHxS of PFOS and/or sum of PFAS concentrations show an increasing trend in groundwater.	This will be evaluated in the OMR.	No actions recommended.
Sum of PFHxS of PFOS and/or sum of PFAS concentrations show a decreasing trend in groundwater.	This will be evaluated in the OMR.	No actions recommended.

The findings of the annual biota sampling event in October 2023 are summarised in Table 14 below.

Table 14 Summary of annual biota sampling event in October 2023

Item	Comment	Recommended actions
Access to sampling locations	All proposed monitoring locations were accessible.	Continue monitoring in accordance with the SAQP.
Analytical results	PFAS concentrations were recorded above the LOR at 45 of 56 primary samples.	Continue monitoring in accordance with the SAQP.
New exceedance of adopted criteria for biota	No locations reported a new exceedance of adopted criteria for biota.	Continue monitoring in accordance with the SAQP.
First-time detection of PFAS in biota	No locations reported first-time detections of PFAS in biota.	Continue monitoring in accordance with the SAQP.

Item	Comment	Recommended actions
Sum of PFHxS and PFOS and/or sum of PFAS concentrations show an increasing trend in biota	This will be evaluated in the OMR.	Continue monitoring in accordance with the SAQP.
Sum of PFHxS and PFOS and/or sum of PFAS concentrations show a decreasing trend in biota	This will be evaluated in the OMR.	Continue monitoring in accordance with the SAQP.

5.2 Upcoming sampling events

Wet season surface water sampling will take place during the early part of the wet season, likely December 2023 to January 2024, then again during the late wet season in March to April 2024.

The next groundwater sampling event is scheduled for April 2024.

5.3 Upcoming Ongoing Monitoring Report

The next OMR Report is scheduled to be delivered in the second half of 2024.

6.0 References

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Appendix A

Figures

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DATUM GDA 1994, PROJECTION MGA ZONE 52

0 0.5 1 2
Kilometres

1:45,000 (when printed at A3)

Legend

- RAAF Base Darwin
- Source Area
- Management Area
- Drainage
- Highway

ID	Inferred PFAS Source Area
01	Former Fire Training Ground 1
02	Former Fuel Farm 5
03	Former Fuel Farm 4
04	Former Fuel Farm 6
05	AFFF Contaminated Soil Stockpiles
06	Former ARFF Fire Station
07	Hanger 31
08	Former Fuel Farm 1
09	Former RAAF Fire Station
10	Former Fire Training Ground 2
11	Current Fire Training Ground

Data sources:

Base Data: Imagery (c) 2017 Esri

Department of Defence
RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Dry Season Sampling Factual Report 2023

PFAS Management Area

PROJECT ID 60612561
CREATED BY [redacted]
LAST MODIFIED [redacted]
VERSION: 1

Figure
1

Filename: [redacted]

A3 size

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DATUM GDA 1994, PROJECTION MGA ZONE 52

0 0.2 0.4 0.6 0.8 1

Kilometers

1:35,000 (when printed at A3)

LEGEND

- RAAF Base Darwin
- Source Area
- Watercourses
- Highway
- Surface Water Locations

ID	Inferred PFAS Source Area
01	Former Fire Training Ground 1
02	Former Fuel Farm 5
03	Former Fuel Farm 4
04	Former Fuel Farm 6
05	AFFF Contaminated Soil Stockpiles
06	Former ARFF Fire Station
07	Hanger 31
08	Former Fuel Farm 1
09	Former RAAF Fire Station
10	Former Fire Training Ground 2
11	Current Fire Training Ground

Data sources:

Base Data: Imagery (c) 2017 ESRI

Department of Defence
RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Dry Season Sampling Factual Report 2023
AUGUST 2023

Off-Base Surface Water Sampling Location

PROJECT ID 60612561
CREATED BY [redacted]
LAST MODIFIED ROB.MCGREGOR 04 DEC 2023
VERSION: 1

Figure 2

Filename: [redacted]

A3 size

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DATUM GDA 1994, PROJECTION MGA ZONE 52

0 200 400 600 800 1,000

Metres

1:20,000 (when printed at A3)

LEGEND

- RAAF Base Darwin
- Source Area
- Watercourses
- Highway
- Not Sampled - Dry or Inaccessible
- Bi-annual Monitoring Locations

Note: MW235 was gauged as a contingency location for MW422

ID	Inferred PFAS Source Area
01	Former Fire Training Ground 1
02	Former Fuel Farm 5
03	Former Fuel Farm 4
04	Former Fuel Farm 6
05	AFFF Contaminated Soil Stockpiles
06	Former ARFF Fire Station
07	Hanger 31
08	Former Fuel Farm 1
09	Former RAAF Fire Station
10	Former Fire Training Ground 2
11	Current Fire Training Ground

Data sources:

Base Data: Imagery (c) NTLIS

Department of Defence
RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Dry Season Sampling Factual Report 2023

Groundwater Sampling Locations

PROJECT ID 60612561
CREATED BY [redacted]
LAST MODIFIED
VERSION 1

Figure 3

A3 size

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0 200 400 600 800 1,000

Metres

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LEGEND

- RAAF Base Darwin
- Source Area
- Highway
- Watercourses
- Bi-annual Monitoring Locations
- Inferred Groundwater Level
- Inferred Groundwater Direction
- <all other values>

ID	Inferred PFAS Source Area
01	Former Fire Training Ground 1
02	Former Fuel Farm 5
03	Former Fuel Farm 4
04	Former Fuel Farm 6
05	AFFF Contaminated Soil Stockpiles
06	Former ARFF Fire Station
07	Hanger 31
08	Former Fuel Farm 1
09	Former RAAF Fire Station
10	Former Fire Training Ground 2
11	Current Fire Training Ground

Data sources:

Base Data: Imagery (c) NTLIS

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RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Dry Season Sampling Factual Report 2023

Inferred Groundwater Contours

PROJECT ID 606*2561
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VERSION: 1

Figure 4

Filename: [redacted]

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DATUM GDA 1994, PROJECTION MGA ZONE 52

0 200 400 600 800 1,000

Metres

1:35,000 (when printed at A3)

LEGEND

- RAAF Base Darwin
- RAAF Darwin Airside Zone
- Watercourses
- Biota Sampling Location

Data sources:

Base Data: Imagery (c) NTLIS

Department of Defence
RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Dry Season Sampling Factual Report 2023

Annual Biota Sampling Locations

PROJECT ID 60612561
CREATED BY [redacted]
LAST MODIFIED
VERSION: 1

Figure 5

Filename: [redacted]

A3 size

Appendix B

Tables

Appendix B - Table 1
Surface Water Field Results
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Table 1 - Surface Water Physico-chemical Parameters Results

AECOM

Location ID	Sampled Date	DO (mg/L)	EC (µS/cm)	pH	Redox (mV)	Redox corrected (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method
SW109	30/08/2023	0.64	100.6	6.01	57.5	257.5	25.8	Moderate	Colourless	No odour	Natural sheen	Grab

Notes:

mg/L: milligram per Litre

µS/cm: microsiemens per centimetre

mV: millivolts

°C: degrees celcius

Appendix B - Table 2
Surface Water Analytical Results
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Table 2 - Surface Water Analytical Results

AECOM

															PFAS Full Suite																				
															10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFAS	Sum of PFHxS and PFOS	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorohexane sulfonic acid (PFHxS)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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							0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.05	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	0.02	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																																	**0.07**		**0.56**	
PFAS NEMP 2020 Freshwater 99%																																		*0.00023*	*19*	
PFAS NEMP 2020 Recreational Water																																	2		10	
Location	**Date**	**Field ID**	**Sample Type**	**Lab Report**																																	
SW109	30/08/2023	1302_SW109_230830	Primary	ES2329252		<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.14	<0.02	<0.02	0.09	0.03	<0.05	<0.02	<0.02	2.25	**1.84**	*1.1*	0.03	0.74
SW109	30/08/2023	1302_QC100_230830	Intra-lab Duplicate	ES2329252		<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.12	<0.02	<0.02	0.08	0.03	<0.05	<0.02	<0.02	2.12	**1.74**	*1.05*	0.04	0.69
SW109	30/08/2023	1302_QC200_230830	Inter-lab Duplicate	RN1404541		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.055	<0.05	<0.01	<0.01	<0.01	0.021	0.011	0.082	<0.01	<0.01	0.065	<0.02	<0.02	<0.02	<0.01	-	**1.11**	*0.53*	0.021	0.58

Notes:
µg/L: micrograms per litre
LOR: limit of reporting
Denotes first time detection above LOR for Sum of PFHxS+PFOS or PFOA
Denotes new exceedance of human health screening criteria

Appendix B - Table 3
Field Parameters
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Darwin

Table 3 - Groundwater Physico-chemical parameters

AECOM

	Gauging Results							Sampling Results								
Location ID	Date	TOC (AHD)	Depth to Product (mbtoc)	Depth to Water (mbtoc)	Well Depth (mbtoc)	Elevation (mAHD)	Well Condition	Date	DO (mg/L)	EC (µS/cm)	pH	Redox (mV)	Redox (corr) (mV)	Temp (°C)	Comments	Sample Method
MW103	17/10/2023	19.55	-	3.765	12.32	15.78	Good	30/01/2023	0.86	206.9	4.68	118.4	318.4	32.7	High turbidity at the bottom of sleeve, no odour, no sheen, roots	Hydrasleeve
MW107	17/10/2023	21.94	-	5.262	15.75	16.68	Good	30/10/2023	1.54	176.1	4.58	150.8	350.8	32.0	High turbidity at the bottom of sleeve, no odour, no sheen	Hydrasleeve
MW112	17/10/2023	26.97	-	-	-	-	Inaccessible	-	-	-	-	-	-	-	Not sampled as it is suspected to be under construction earthworks.	-
MW115	17/10/2023	32.41	-	10.220	14.78	22.19	Good	31/10/2023	4.68	140.6	4.70	129.1	329.1	30.8	Moderate turbidity, no odour, no sheen	Hydrasleeve
MW128	8/11/2023	11.39	-	-	-	-	Good	9/11/2023	-	-	-	-	-	-	Field parameters lost, sample collected on 9/11/2023	Hydrasleeve
MW133	18/10/2023	30.21	12.05	12.076	-	18.13	Good	31/10/2023	1.09	142.4	5.02	80.4	280.4	30.9	Low turbidity, strong hydrocarbon odour, sheen	Hydrasleeve
MW139	17/10/2023	28.55	-	10.801	15.80	17.75	Good	30/10/2023	3.35	41.2	4.69	118.4	318.4	31.4	Moderate turbidity, no odour, no sheen	Hydrasleeve
MW141	17/10/2023	30.10	-	10.611	16.32	19.49	Good	30/10/2023	1.13	164.1	4.56	97.2	297.2	31.1	Low turbidity, no odour, no sheen	Hydrasleeve
MW144	17/10/2023	30.69	-	10.141	16.35	20.55	Good	30/10/2023	3.34	187.8	4.53	142.7	342.7	31.5	Moderate turbidity, no odour, no sheen	Hydrasleeve
MW148	17/10/2023	12.16	-	3.815	11.40	8.34	Good	3/10/2023	0.86	185.4	4.97	98.6	298.6	31.1	High turbidity at the bottom of sleeve, no odour, no sheen	Hydrasleeve
MW156	17/10/2023	23.04	-	4.405	11.20	18.64	Good	31/10/2023	2.71	94.9	4.60	183.5	383.5	29.5	Low turbidity, no odour, no sheen	Hydrasleeve
MW176	17/10/2023	18.74	-	3.771	11.87	14.97	Good	31/10/2023	3.39	261.0	5.40	133.3	333.3	30.0	High turbidity at the bottom of the sleeve, no odour, no sheen	Hydrasleeve
MW180	17/10/2023	29.06	-	12.748	15.52	16.31	Good	31/10/2023	4.46	159.2	4.22	192.4	392.4	33.7	High turbidity at the bottom of the sleeve, no odour, no sheen	Hydrasleeve
MW185	18/10/2023	5.82	-	3.315	10.29	2.51	Good	31/10/2023	3.12	696.0	4.66	177.9	377.9	31.2	Moderate turbidity, no odour, no sheen	Hydrasleeve
MW190	18/10/2023	11.34	-	2.089	12.56	9.25	Good	31/10/2023	2.84	164.5	4.60	160.6	360.6	32.4	High turbidity, no odour, no sheen	Hydrasleeve
MW191	18/10/2023	10.91	-	5.835	12.84	5.07	Good	31/10/2023	2.84	164.5	4.60	160.6	360.6	32.4	Moderate turbidity, no odour, no sheen	Hydrasleeve
MW194	18/10/2023	18.24	-	4.372	12.78	13.87	Good	31/10/2023	1.33	91.8	4.75	150.6	350.6	30.8	Low turbidity, no odour, no sheen	Hydrasleeve
MW195	18/10/2023	16.74	-	3.271	11.25	13.47	Good	31/10/2023	1.40	125.9	4.98	146.5	346.5	30.5	High turbidity at the bottom of sleeve, no odour, no sheen	Hydrasleeve
MW197	17/10/2023	26.20	-	-	-	-	Dry	-	-	-	-	-	-	-	Dry - not sampled	-
MW200	17/10/2023	26.23	-	5.581	11.89	20.65	Good	31/10/2023	2.10	131.2	4.69	130.1	330.1	30.2	Moderate turbidity at the bottom of the sleeve no odour, no sheen	Hydrasleeve
MW205	17/10/2023	27.75	-	9.721	14.92	18.02	Good	31/10/2023	-	121.6	4.52	159.7	359.7	30.6	Moderate turbidity, no odour, no sheen	Hydrasleeve
MW209	17/10/2023	7.11	-	2.325	11.38	4.79	Good	31/10/2023	1.34	1794.0	4.43	217.1	417.1	31.4	High turbidity, no odour, no sheen, roots	Hydrasleeve
MW210	17/10/2023	6.91	-	3.235	11.31	3.68	Good	31/10/2023	0.91	255.8	4.98	105.5	305.5	32.8	High turbidity at the bottom of the sleeve, no odour, no sheen	Hydrasleeve
MW211	17/10/2023	22.51	-	6.275	14.87	16.24	Good	31/10/2023	4.51	184.3	4.74	198.1	398.1	31.7	Moderate turbidity at the bottom of the sleeve, no odour, no sheen	Hydrasleeve
MW215	17/10/2023	26.32	-	8.865	15.46	17.45	Good	30/10/2023	1.14	154.1	5.25	31.1	231.1	31.5	High turbidity at the bottom of sleeve, no odour, no sheen, roots on collar	Hydrasleeve
MW235	18/10/2023	27.55	-	9.921	14.64	17.63	Damaged	-	-	-	-	-	-	-	Replacement for MW422, bent PVC casing, not able to sampled.	-
MW240	17/10/2023	25.60	-	-	-	-	Dry	-	-	-	-	-	-	-	Dry - not sampled	-
MW241	17/10/2023	25.01	-	-	-	-	Dry	-	-	-	-	-	-	-	Dry - not sampled	-
MW297	18/10/2023	29.53	10.83	10.841	-	18.69	Good	31/10/2023	1.01	121.2	5.17	41.6	241.6	30.4	Low turbidity, strong hydrocarbon odour, sheen	Hydrasleeve
MW303	18/10/2023	31.94	-	12.991	16.12	18.95	Good	30/10/2023	0.84	427.0	5.65	-11.9	188.1	33.0	Moderate turbidity, strong hydrocarbon odour, sheen	Hydrasleeve
MW451	17/10/2023	12.98	-	4.999	39.31	7.98	Good	30/10/2023	1.52	194.8	5.18	106.8	306.8	30.9	High turbidity, no odour, no sheen	Hydrasleeve
MW452	17/10/2023	11.39	-	2.595	13.66	8.80	Good	30/10/2023	1.35	83.1	4.69	153.8	353.8	31.3	High turbidity, no odour, no sheen	Hydrasleeve
MW453	17/10/2023	25.08	-	-	-	-	Dry	-	-	-	-	-	-	-	Dry - not sampled	-
MW454	18/10/2023	26.27	-	8.311	11.28	17.96	Good	31/10/2023	1.70	126.3	4.52	192.6	392.6	30.7	High turbidity, no odour, no sheen	Hydrasleeve

Notes:
NM: not measured - data collection error
mg/L: milligram per Litre
µS/cm: microsiemens per centimetre
mV: millivolts
°C: degrees celcius
Corrected redox = redox + 200
^ TOC elevation not within DERP

Appendix B - Table 4
Groundwater Analytical Results
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Table 4 - Groundwater Analytical Results

AECOM

					PFAS Full Suite																																	
					10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFAS	Sum of PFHxS and PFOS	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorohexane sulfonic acid (PFHxS)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																																*0.07*			*0.56*	
PFAS NEMP 2020 Freshwater 99%																																	0.00023	19	
PFAS NEMP 2020 Recreational Water																																**2**		**10**		
Location	**Date**	**Field ID**	**Sample Type**	**Lab Report**																																		
MW103	30/10/2023	1302_MW103_231030	Primary	ES2337724	<0.05	<0.05	1.89	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.1	<0.02	<0.02	<0.02	0.27	0.1	0.71	<0.02	<0.02	0.35	0.36	<0.05	<0.02	<0.02	17.8	***13.6***	9.93	0.19	3.66
MW107	30/10/2023	1302_MW107_231030	Primary	ES2337724	<0.05	<0.05	1.21	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	0.1	<0.02	<0.02	<0.02	0.18	0.09	0.59	<0.02	<0.02	0.31	0.27	<0.05	<0.02	<0.02	11.3	***8.15***	5.48	0.14	2.67
MW115	31/10/2023	1302_MW115_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	3.92	0.9	0.13	<0.05	<0.05	4.38	0.81	7.22	<0.05	0.16	3.89	1.54	<0.12	<0.05	<0.05	254	***228***	201	*2.36*	27.2
MW128	9/11/2023	1302_MW128_231109	Primary	ES2338712	<0.05	<0.05	0.8	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	0.08	0.06	0.41	<0.02	<0.02	0.12	0.23	<0.12	<0.05	<0.05	6.48	***4.56***	3.26	*0.1*	1.3
MW128	9/11/2023	1302_QC100_231109	Intra-lab Duplicate	ES2338712	<0.05	<0.05	0.77	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	0.08	0.06	0.43	<0.02	<0.02	0.12	0.24	<0.12	<0.05	<0.05	6.64	***4.71***	3.36	*0.11*	1.35
MW128	9/11/2023	1302_QC200_231109	Inter-lab Duplicate	RN1411490	<0.01	<0.01	0.65	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.11	0.092	<0.01	<0.01	<0.01	0.05	0.052	0.37	<0.01	<0.01	0.098	0.21	<0.02	<0.02	<0.01	-	-	3.9	0.083	1.2
MW133	31/10/2023	1302_MW133_231031	Primary	ES2337724	<0.05	<0.05	0.12	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	0.43	<0.2	<0.05	<0.05	<0.05	0.66	0.17	1.93	<0.05	<0.05	0.48	0.32	<0.12	<0.05	<0.05	41.6	***37***	31.6	0.5	5.39
MW139	30/10/2023	1302_MW139_231030	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.08	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	1.79	*1.56*	1.15	0.02	0.41
MW141	30/10/2023	1302_MW141_231030	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.32	*0.32*	0.17	<0.01	0.15
MW144	30/10/2023	1302_QC100_231030	Intra-lab Duplicate	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	<0.1	<0.02	<0.02	<0.02	0.08	0.02	0.22	<0.02	<0.02	0.17	0.04	<0.05	<0.02	<0.02	4.61	***3.86***	2.52	0.06	1.34
MW144	30/10/2023	1302_QC200_231030	Inter-lab Duplicate	RN1410783	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.17	<0.05	<0.01	<0.01	<0.01	0.052	0.025	0.24	<0.01	<0.01	0.15	0.045	<0.02	<0.02	<0.01	-	-	1.7	0.052	1.4
MW144	30/10/2023	1302_MW144_231030	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	<0.1	<0.02	<0.02	<0.02	0.11	0.03	0.24	<0.02	<0.02	0.19	0.04	<0.05	<0.02	<0.02	5.45	***4.6***	3.08	0.06	1.52
MW148	30/10/2023	1302_MW148_231030	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	<0.1	<0.02	<0.02	<0.02	0.2	0.04	0.24	<0.02	<0.02	0.21	0.05	<0.05	<0.02	<0.02	8.81	***7.79***	5.67	0.1	2.12
MW156	31/10/2023	1302_MW156_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	<0.1	<0.02	<0.02	<0.02	0.12	0.03	0.26	<0.02	<0.02	0.16	0.06	<0.05	<0.02	<0.02	6.09	***5.25***	3.81	0.07	1.44
MW176	31/10/2023	1302_QC101_231031	Intra-lab Duplicate	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.1	*0.1*	0.07	<0.01	0.03
MW176	31/10/2023	1302_QC201_231031	Inter-lab Duplicate	RN1410783	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-	-	<0.02	<0.01	0.025
MW176	31/10/2023	1302_MW176_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.1	*0.1*	0.07	<0.01	0.03
MW180	31/10/2023	1302_MW180_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	*0.07*	0.02	<0.01	0.05
MW185	31/10/2023	1302_QC102_231031	Intra-lab Duplicate	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.43	*0.33*	0.11	0.01	0.22
MW185	31/10/2023	1302_QC202_231031	Inter-lab Duplicate	RN1410783	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.038	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	<0.01	0.027	<0.02	<0.02	<0.02	<0.01	-	-	0.058	<0.01	0.24
MW185	31/10/2023	1302_MW185_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.49	*0.37*	0.13	0.01	0.24
MW190	31/10/2023	1302_MW190_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.15	<0.02	<0.02	0.09	0.03	<0.05	<0.02	<0.02	2.29	*1.85*	1.14	0.04	0.71
MW191	31/10/2023	1302_MW191_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.13	<0.02	<0.02	0.06	0.04	<0.05	<0.02	<0.02	2.63	***2.26***	1.62	0.04	0.64
MW194	31/10/2023	1302_MW194_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	<0.1	<0.02	<0.02	<0.02	0.06	0.02	0.16	<0.02	<0.02	0.09	0.04	<0.05	<0.02	<0.02	3	***2.51***	1.78	0.04	0.73
MW195	31/10/2023	1302_MW195_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	*0.11*	0.07	<0.01	0.04
MW200	31/10/2023	1302_MW200_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.08	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	1.82	*1.52*	0.89	0.03	0.63
MW205	31/10/2023	1302_MW205_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	<0.1	<0.02	<0.02	<0.02	0.14	0.04	0.3	<0.02	<0.02	0.26	0.06	<0.05	<0.02	<0.02	7.06	***5.93***	3.88	0.1	2.05
MW209	31/10/2023	1302_MW209_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01*	<0.01	<0.01
MW210	31/10/2023	1302_MW210_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.11	<0.02	<0.02	0.09	0.03	<0.05	<0.02	<0.02	3.71	***3.29***	2.49	0.05	0.8
MW211	31/10/2023	1302_MW211_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.32	*0.32*	0.23	<0.01	0.09
MW215	30/10/2023	1302_MW215_231030	Primary	ES2337724	<0.05	<0.05	1.81	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.1	<0.02	<0.02	<0.02	0.1	0.1	0.51	<0.02	<0.02	0.12	0.5	<0.05	<0.02	<0.02	8	***4.59***	3.4	0.06	1.19
MW297	30/10/2023	1302_MW297_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	0.74	<0.2	<0.05	<0.05	<0.05	0.73	0.27	1.61	<0.05	<0.05	0.76	0.28	<0.12	<0.05	<0.05	44	***39***	32.9	*0.66*	6.08
MW303	30/10/2023	1302_MW303_231030	Primary	ES2337724	<0.05	<0.05	0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	4.72	1.1	<0.05	<0.05	<0.05	2.62	1.2	9.06	<0.05	0.06	4.98	1.56	<0.12	<0.05	<0.05	122	***93.7***	60.1	*2.78*	33.6
MW451	30/10/2023	1302_MW451_231030	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01*	<0.01	<0.01
MW452	30/10/2023	1302_MW452_231030	Primary	ES2337724	<0.05	<0.05	0.14	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	<0.1	<0.02	<0.02	<0.02	0.07	0.04	0.19	<0.02	<0.02	0.13	0.08	<0.05	<0.02	<0.02	4.56	***3.76***	2.56	0.06	1.2
MW454	31/10/2023	1302_MW454_231031	Primary	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	1.72	0.4	<0.05	<0.05	<0.05	0.92	0.34	2.94	<0.05	<0.05	1.79	0.63	<0.12	<0.05	<0.05	47.7	***38.3***	26.1	*0.66*	12.2

Notes:
µg/L: micrograms per litre
LOR: limit of reporting
* LOR is above guideline value
Denotes first time detection above LOR for Sum of PFHxS+PFOS or PFOA
Denotes new exceedance of human health screening criteria

Appendix B - Table 5
Biota Analytical Results
PFAS Ongoing Monitoring Plan
AECOM - RAAF Base Darwin

Table 5 - Biota Analytical Results

AECOM

| | | |

Appendix C

Calibration Certificate & Sampling Logs

AECOM

Sampling round: **Location:** **Project number & name:**

PM: **Field staff:** **Client:**

Date	YSI #	Temp (°C)	pH 4		pH 7		DO (100%)		EC 1413 (µS/cm)		ORP (mV)		Initials
			Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	
30/10	C	30.5	4.02	4.01	6.92	7.01	100	101	1387	1410	210	220	[redacted]
31/10	C	30	4.01	4.01	7.02	7.01	100	101	1396	1411	215	224	
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						

Notes:

AECOM

ANZ

FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name:	PFASOMP	Project Number:	60612561	PM Name:	[redacted]	Bore ID:	
Client:	Defence	Project Location:	Darwin	Fieldwork Staff:		Sample Date:	30/8/23
						Well Development or Well Sampling Event? (circle)	

General Bore Information		Parameter Info.	Decontamination	Sampling Method	Hydrasleeve Info.	
Date of GW Level:	Bore Radius (mm):	Chem Kit Serial No.:	☐ Decontaminated	☐ Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence followed (number in order):
Depth to GW (m-pvc):	Screen Interval (m):	Chem Kit Model:	☒ Dedicated	Intake depth:	Hydrasleeve Type:	
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	☒ Disposable	☐ Bailer ☐ Hydrasleeve	Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	☐ Other (specify)	☐ Peristaltic Pump ☐ Waterra	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: ☐ Downhole		☐ Other (specify)	Sampling Start Time:	Hydrasleeve out
	Key Type (if applicable):	☐ Retrieved				Parameters

Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):

Water Quality Parameters

Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
9:48	SINIL09			0.64	100.6	6.01	57.5	25.8	Stagnant upstream to down stream low flow, clear, colourless, no odour no sheen cloudy sheen on top
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)

Analytes Sampled for:		Bottles Collected			QA/QC Information	Field Comments
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO_3)	QC100 & QC200	Bore volume calculation, bore condition, fate of tubing, redox correction etc.
[redacted]	X	x 40 mL Vial (H_2SO_4)	x 100 mL Amber	x 250 mL Plastic		
		16 x 20ml PFAS				

Approval and [redacted]

30/8/23 Date

30/8/23 Date

[redacted] nature

30/8/23 Date

[redacted]

Distribution: Project Central File

Name	ProjectId	RiskDescription	DateApproved	PrimarySampler	SecondarySampler	QuoteId	Status
1302 OMP	NT_1302_PFASOMP_23		Wed 01 Nov 2023 03:28:11 GMT			ES2019AECOMAU0030	WorkorderReceived

Sample Points

Id	Name	Description	CollectionDate	Lat	Lng	MatrixId	OnHold	pH	Conductivity	Temperature	Dissolved Oxygen	Redox Potential	Standing Water Level	Observations			
1	1302_MW215_231030		30/10/2023 15:59			WATER	FALSE	5.25	154.1	31.5	1.14	31.1	9.174	High turbidity at the bottom of the sleeve	no odour	no sheen	roots on collar
2	1302_MW297_231031		30/10/2023 17:04			WATER	FALSE	5.17	121.2	30.4	1.01	41.6	10.252	Low turbidity	hydrocarb	sheen	
3	1302_MW303_231030		30/10/2023 16:19			WATER	FALSE	5.65	427	33	0.84	-11.9	13.565	Moderate turbidity	hydrocarb	sheen	
4	1302_MW133_231031		31/10/2023 8:43			WATER	FALSE	5.02	142.4	30.9	1.09	80.4	12.722	Low turbidity	hydrocarb	sheen	
5	1302_MW205_231031		31/10/2023 10:27			WATER	FALSE	4.52	121.6	30.6	121.9	159.7	10.462	Moderate turbidity	no odour	no sheen	
6	1302_MW139_231030		30/10/2023 14:03			WATER	FALSE	4.69	141.2	31.4	3.35	118.4	11.335	Moderate turbidity	no odour	no sheen	
7	1302_MW103_231030		30/10/2023 15:43			WATER	FALSE	4.68	206.9	32.7	0.86	118.4	6.635	High turbidity at the bottom of the sleeve	no odour	no sheen	roots on collar
8	1302_MW115_231031		31/10/2023 10:10			WATER	FALSE	4.7	140.6	30.8	4.68	129.1	10.669	Moderare turbidity	no odour	no sheen	
9	1302_MW107_231030		30/10/2023 18:29			WATER	FALSE	4.58	176.1	32	1.54	150.8	5.951	High turbidity at bottom of sleeve	no odour	no sheen	
10	1302_MW141_231030		30/10/2023 13:49			WATER	FALSE	4.56	164.1	31.1	1.13	97.2	11.249	Low turbidity	no odour	no sheen	
11	1302_MW144_231030		30/10/2023 13:27			WATER	FALSE	4.53	187.8	31.5	3.34	142.7	10.265	Moderare turbidity	no odour	no sheen	
12	1302_MW148_231030		30/10/2023 18:54			WATER	FALSE	4.97	185.4	31.1	0.86	98.6	4.209	High turbidity at bottom of sleeve	no odour	no sheen	
13	1302_MW156_231031		31/10/2023 10:52			WATER	FALSE	4.6	94.9	29.5	2.71	183.5	5.405	Low turbidity	no odour	no sheen	
14	1302_MW451_231030		30/10/2023 19:02			WATER	FALSE	5.18	194.8	30.9	1.52	106.8	5.213	High turbidity	no odour	no sheen	
15	1302_MW452_231030		30/10/2023 18:47	-12.420166	130.85658	WATER	FALSE	4.69	83.1	31.3	1.35	153.8	3.812	High turbidity	no odour	no sheen	
16	1302_MW454_231031		31/10/2023 11:28			WATER	FALSE	4.52	126.3	30.7	1.7	192.6	10.199	High turbidity	no odour	no sheen	
17	1302_MW185_231031		31/10/2023 14:37			WATER	FALSE	4.66	696	31.2	3.12	177.9	3.771	Moderate turbidity	no odour	no sheen	
18	1302_MW191_231031		31/10/2023 14:55			WATER	FALSE	4.6	164.5	32.4	2.84	160.6	6.531	Moderate turbidity	no odour	no sheen	
19	1302_MW190_231031		31/10/2023 15:10			WATER	FALSE	4.43	271.1	32.4	2.11	179.2	2.188	High turbidity	no odour	no sheen	
20	1302_MW194_231031		31/10/2023 15:29			WATER	FALSE	4.75	91.8	30.8	1.33	150.6	4.809	Low turbidity	no odour	no sheen	
21	1302_MW195_231031		31/10/2023 15:22			WATER	FALSE	4.98	125.9	30.5	1.4	146.5	2.479	High turbidity at bottom of sleeve	no odour	no sheen	
22	1302_MW176_231031		31/10/2023 8:03			WATER	FALSE	5.4	261	30	3.39	133.3	3.632	High turbidity at bottom of sleeve	no odour	no sheen	
23	1302_MW180_231031		31/10/2023 13:34			WATER	FALSE	4.22	159.2	33.7	4.46	192.4	13.211	High turbidity at bottom of sleeve	no odour	no sheen	
24	1302_MW200_231031		31/10/2023 8:19			WATER	FALSE	4.69	131.2	30.2	2.1	130.1	6.809	Moderate turbidity at bottom of sleeve	no odour	no sheen	
25	1302_MW209_231031		31/10/2023 14:08			WATER	FALSE	4.43	1794	31.4	1.34	217.1	2.736	High turbidity	no odour	no sheen	roots
26	1302_MW211_231031		31/10/2023 13:52			WATER	FALSE	4.74	184.3	31.7	4.51	198.1	6.867	Moderate turbidity at bottom of sleeve	no odour	no sheen	
27	1302_MW210_231031		31/10/2023 15:57			WATER	FALSE	4.98	255.8	32.8	0.91	105.5	3.285	High turbidity at bottom of sleeve	no odour	no sheen	
28	1302_QC200_231030	Pls forward to NMI for analysis	30/10/2023 13:41			WATER	FALSE										
29	1302_QC300_231030		30/10/2023 10:44			WATER	FALSE										
30	1302_QC400_231030		30/10/2023 10:45			WATER	FALSE										
31	1302_QC500_231030		30/10/2023 10:47			WATER	FALSE										
32	1302_QC100_231030		30/10/2023 13:40			WATER	FALSE										
33	1302_QC101_231031		31/10/2023 8:08			WATER	FALSE										
34	1302_QC201_231031		31/10/2023 8:09			WATER	FALSE										
35	1302_QC301_231031		31/10/2023 9:44			WATER	FALSE										
36	1302_QC401_231031		31/10/2023 9:44			WATER	FALSE										
37	1302_QC501_231031		31/10/2023 9:45			WATER	FALSE										
38	1302_QC202_231031		31/10/2023 14:43			WATER	FALSE										
39	1302_QC102_231031		31/10/2023 14:45			WATER	FALSE										

Appendix D

Lab Reports

CHAIN OF CUSTODY

(ALS) COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	[redacted]
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS 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:

Subcon / Forward Lab / Split WO

Lab / Analysis: ALS NMI

Organised By / Date:

Relinquished By / Date:

Connote / Courier: QC EMD

WO No: ES2337724

Attached By PO / Internal Sheet:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_MW215_231030		30/10/2023 03:59 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_MW297_231031		30/10/2023 05:04 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_MW303_231030		30/10/2023 04:19 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_MW133_231031		31/10/2023 08:43 AM	WATER	ALS: 2 Non ALS: 0	No	X		
005	1302_MW205_231031		31/10/2023 10:27 AM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_MW139_231030		30/10/2023 02:03 PM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_MW103_231030		30/10/2023 03:43 PM	WATER	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Sydney
Work Order Reference
ES2337724

Telephone : +61-2-8784 8555

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: [redacted] 2/11/23 1705

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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	1302_MW115_231031		31/10/2023 10:10 AM	WATER	ALS: 2 Non ALS: 0	No	X		
009	1302_MW107_231030		30/10/2023 06:29 PM	WATER	ALS: 2 Non ALS: 0	No	X		
010	1302_MW141_231030		30/10/2023 01:49 PM	WATER	ALS: 2 Non ALS: 0	No	X		
011	1302_MW144_231030		30/10/2023 01:27 PM	WATER	ALS: 2 Non ALS: 0	No	X		
012	1302_MW148_231030		30/10/2023 06:54 PM	WATER	ALS: 2 Non ALS: 0	No	X		
013	1302_MW156_231031		31/10/2023 10:52 AM	WATER	ALS: 2 Non ALS: 0	No	X		
014	1302_MW451_231030		30/10/2023 07:02 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] DATE TIME: 2/11/23 1705

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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
015	1302_MW452_231030		30/10/2023 06:47 PM	WATER	ALS: 2 Non ALS: 0	No	X		
016	1302_MW454_231031		31/10/2023 11:28 AM	WATER	ALS: 2 Non ALS: 0	No	X		
017	1302_MW185_231031		31/10/2023 02:37 PM	WATER	ALS: 2 Non ALS: 0	No	X		
018	1302_MW191_231031		31/10/2023 02:55 PM	WATER	ALS: 2 Non ALS: 0	No	X		
019	1302_MW190_231031		31/10/2023 03:10 PM	WATER	ALS: 2 Non ALS: 0	No	X		
020	1302_MW194_231031		31/10/2023 03:29 PM	WATER	ALS: 2 Non ALS: 0	No	X		
021	1302_MW195_231031		31/10/2023 03:22 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] DATE TIME: 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
022	1302_MW176_231031		31/10/2023 08:03 AM	WATER	ALS: 2 Non ALS: 0	No	X		
023	1302_MW180_231031		31/10/2023 01:34 PM	WATER	ALS: 2 Non ALS: 0	No	X		
024	1302_MW200_231031		31/10/2023 08:19 AM	WATER	ALS: 2 Non ALS: 0	No	X		
025	1302_MW209_231031		31/10/2023 02:08 PM	WATER	ALS: 2 Non ALS: 0	No	X		
026	1302_MW211_231031		31/10/2023 01:52 PM	WATER	ALS: 2 Non ALS: 0	No	X		
027	1302_MW210_231031		31/10/2023 03:57 PM	WATER	ALS: 2 Non ALS: 0	No	X		
~~028~~	1302_QC200_231030	Pls forward to NMI for analysis	30/10/2023 01:41 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] DATE TIME: 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3
SAMPLER MOBILE: / ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
029	1302_QC300_231030		30/10/2023 10:44 AM	WATER	ALS: 2 Non ALS: 0	No	X		
030	1302_QC400_231030		30/10/2023 10:45 AM	WATER	ALS: 2 Non ALS: 0	No	X		
031	1302_QC500_231030		30/10/2023 10:47 AM	WATER	ALS: 2 Non ALS: 0	No	X		
032	1302_QC100_231030		30/10/2023 01:40 PM	WATER	ALS: 2 Non ALS: 0	No	X		
033	1302_QC101_231031		31/10/2023 08:08 AM	WATER	ALS: 2 Non ALS: 0	No	X		
~~034~~	1302_QC201_231031		31/10/2023 08:09 AM	WATER	ALS: 2 Non ALS: 0	No	X		
035	1302_QC301_231031		31/10/2023 09:44 AM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: [redacted] 2/11/23 1705

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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
036	1302_QC401_231031		31/10/2023 09:44 AM	WATER	ALS: 2 Non ALS: 0	No	X		
037	1302_QC501_231031		31/10/2023 09:45 AM	WATER	ALS: 2 Non ALS: 0	No	X		
~~038~~	1302_QC202_231031		31/10/2023 02:43 PM	WATER	ALS: 2 Non ALS: 0	No	X		
039	1302_QC102_231031		31/10/2023 02:45 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: 59290 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] DATE TIME: 2/4/23 1705

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	1302_MW215_231030	HDPE (no PTFE)	20 mL	00350822022986	Grey	No	
001	1302_MW215_231030	HDPE (no PTFE)	20 mL	00350822023337	Grey	No	
002	1302_MW297_231031	HDPE (no PTFE)	20 mL	00350822023531	Grey	No	
002	1302_MW297_231031	HDPE (no PTFE)	20 mL	00350822023236	Grey	No	
003	1302_MW303_231030	HDPE (no PTFE)	20 mL	00350822023219	Grey	No	
003	1302_MW303_231030	HDPE (no PTFE)	20 mL	00350822023206	Grey	No	
004	1302_MW133_231031	HDPE (no PTFE)	20 mL	00350822023017	Grey	No	
004	1302_MW133_231031	HDPE (no PTFE)	20 mL	00350822023170	Grey	No	
005	1302_MW205_231031	HDPE (no PTFE)	20 mL	00350822023414	Grey	No	
005	1302_MW205_231031	HDPE (no PTFE)	20 mL	00350822023266	Grey	No	
006	1302_MW139_231030	HDPE (no PTFE)	20 mL	00350522026073	Grey	No	
006	1302_MW139_231030	HDPE (no PTFE)	20 mL	00350522026195	Grey	No	
007	1302_MW103_231030	HDPE (no PTFE)	20 mL	00351221009258	Grey	No	
007	1302_MW103_231030	HDPE (no PTFE)	20 mL	00351221009200	Grey	No	
008	1302_MW115_231031	HDPE (no PTFE)	20 mL	00350822057969	Grey	No	
008	1302_MW115_231031	HDPE (no PTFE)	20 mL	00350822057970	Grey	No	
009	1302_MW107_231030	HDPE (no PTFE)	20 mL	00350522025972	Grey	No	
009	1302_MW107_231030	HDPE (no PTFE)	20 mL	00350522026267	Grey	No	
010	1302_MW141_231030	HDPE (no PTFE)	20 mL	00350522026036	Grey	No	
010	1302_MW141_231030	HDPE (no PTFE)	20 mL	00350522026069	Grey	No	
011	1302_MW144_231030	HDPE (no PTFE)	20 mL	00350522026072	Grey	No	
011	1302_MW144_231030	HDPE (no PTFE)	20 mL	00350522026228	Grey	No	
012	1302_MW148_231030	HDPE (no PTFE)	20 mL	00350822083204	Grey	No	
012	1302_MW148_231030	HDPE (no PTFE)	20 mL	00350621037086	Grey	No	
013	1302_MW156_231031	HDPE (no PTFE)	20 mL	00350822082939	Grey	No	
013	1302_MW156_231031	HDPE (no PTFE)	20 mL	00350822083037	Grey	No	

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: [redacted] 2/11/23 1705

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	1302_MW451_231030	HDPE (no PTFE)	20 mL	00350822023495	Grey	No	
014	1302_MW451_231030	HDPE (no PTFE)	20 mL	00350822023024	Grey	No	
015	1302_MW452_231030	HDPE (no PTFE)	20 mL	00350822023176	Grey	No	
015	1302_MW452_231030	HDPE (no PTFE)	20 mL	00350822023087	Grey	No	
016	1302_MW454_231031	HDPE (no PTFE)	20 mL	00350822022968	Grey	No	
016	1302_MW454_231031	HDPE (no PTFE)	20 mL	00350822022970	Grey	No	
017	1302_MW185_231031	HDPE (no PTFE)	20 mL	00350822023491	Grey	No	
017	1302_MW185_231031	HDPE (no PTFE)	20 mL	00350822023551	Grey	No	
018	1302_MW191_231031	HDPE (no PTFE)	20 mL	00350822023245	Grey	No	
018	1302_MW191_231031	HDPE (no PTFE)	20 mL	00350822023417	Grey	No	
019	1302_MW190_231031	HDPE (no PTFE)	20 mL	00350822023361	Grey	No	
019	1302_MW190_231031	HDPE (no PTFE)	20 mL	00350822023098	Grey	No	
020	1302_MW194_231031	HDPE (no PTFE)	20 mL	00350822023380	Grey	No	
020	1302_MW194_231031	HDPE (no PTFE)	20 mL	00350822023483	Grey	No	
021	1302_MW195_231031	HDPE (no PTFE)	20 mL	00350822023374	Grey	No	
021	1302_MW195_231031	HDPE (no PTFE)	20 mL	00350822023372	Grey	No	
022	1302_MW176_231031	HDPE (no PTFE)	20 mL	00350822023215	Grey	No	
022	1302_MW176_231031	HDPE (no PTFE)	20 mL	00350822023371	Grey	No	
023	1302_MW180_231031	HDPE (no PTFE)	20 mL	00350822023517	Grey	No	
023	1302_MW180_231031	HDPE (no PTFE)	20 mL	00350822023412	Grey	No	
024	1302_MW200_231031	HDPE (no PTFE)	20 mL	00350822023084	Grey	No	
024	1302_MW200_231031	HDPE (no PTFE)	20 mL	00350822023107	Grey	No	
025	1302_MW209_231031	HDPE (no PTFE)	20 mL	00350822083052	Grey	No	
025	1302_MW209_231031	HDPE (no PTFE)	20 mL	00350822082921	Grey	No	
026	1302_MW211_231031	HDPE (no PTFE)	20 mL	00350822023116	Grey	No	
026	1302_MW211_231031	HDPE (no PTFE)	20 mL	00350822023306	Grey	No	
027	1302_MW210_231031	HDPE (no PTFE)	20 mL	00350822023403	Grey	No	

CHAIN OF CUSTODY

COC#: 59290 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] DATE TIME: 2/11/23 1705

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	1302_MW210_231031	HDPE (no PTFE)	20 mL	00350822023303	Grey	No	
028	1302_QC200_231030	HDPE (no PTFE)	20 mL	00351221009399	Grey	No	
028	1302_QC200_231030	HDPE (no PTFE)	20 mL	00351221009192	Grey	No	
029	1302_QC300_231030	HDPE (no PTFE)	20 mL	00350822023256	Grey	No	
029	1302_QC300_231030	HDPE (no PTFE)	20 mL	00350822023367	Grey	No	
030	1302_QC400_231030	HDPE (no PTFE)	20 mL	00350822082989	Grey	No	
030	1302_QC400_231030	HDPE (no PTFE)	20 mL	00350822083182	Grey	No	
031	1302_QC500_231030	HDPE (no PTFE)	20 mL	00351221009064	Grey	No	
031	1302_QC500_231030	HDPE (no PTFE)	20 mL	00350822061743	Grey	No	
032	1302_QC100_231030	HDPE (no PTFE)	20 mL	00350522026119	Grey	No	
032	1302_QC100_231030	HDPE (no PTFE)	20 mL	00350522025818	Grey	No	
033	1302_QC101_231031	HDPE (no PTFE)	20 mL	00350822023046	Grey	No	
033	1302_QC101_231031	HDPE (no PTFE)	20 mL	00350822023528	Grey	No	
034	1302_QC201_231031	HDPE (no PTFE)	20 mL	00350822023385	Grey	No	
034	1302_QC201_231031	HDPE (no PTFE)	20 mL	00350822023378	Grey	No	
035	1302_QC301_231031	HDPE (no PTFE)	20 mL	00350822023496	Grey	No	
035	1302_QC301_231031	HDPE (no PTFE)	20 mL	00350822023467	Grey	No	
036	1302_QC401_231031	HDPE (no PTFE)	20 mL	00350822023275	Grey	No	
036	1302_QC401_231031	HDPE (no PTFE)	20 mL	00350822082959	Grey	No	
037	1302_QC501_231031	HDPE (no PTFE)	20 mL	00350822022997	Grey	No	
037	1302_QC501_231031	HDPE (no PTFE)	20 mL	00350822083101	Grey	No	
038	1302_QC202_231031	HDPE (no PTFE)	20 mL	00350822023534	Grey	No	
038	1302_QC202_231031	HDPE (no PTFE)	20 mL	00350822023489	Grey	No	
039	1302_QC102_231031	HDPE (no PTFE)	20 mL	00350822023450	Grey	No	
039	1302_QC102_231031	HDPE (no PTFE)	20 mL	00350822023274	Grey	No	

Total Bottle Count: ALS: 78, Non ALS: 0

MP KOL

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

ALS Townsville 14 Dalmore Drive Scoresby QLD 4810 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

ALS Brisbane 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

ALS Cairns 48 Cattarinich Drive Garbutt QLD 4814 Ph: 07 4014 7500 E: cairns.enviro@alsglobal.com

ALS Mackay 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay.environmental@alsglobal.com

ALS Melbourne 4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: melbourne.environmental@alsglobal.com

ALS Perth 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: perth.environmental@alsglobal.com

ALS Newcastle 5/25 Kingsford Smith Drive Tighes Hill NSW 2297 Ph: 02 4968 9433 E: newcastle@alsglobal.com

ALS Adelaide 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

ALS Darwin 27 Ashley Street Winnellie NT 0820 Ph: 08 8984 4300 E: darwin@alsglobal.com

ALS Sydney 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

CLIENT: AECOM	TURNAROUND REQUIREMENTS: ☑ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	FOR LABORATORY USE ONLY (Circle)	
OFFICE: [redacted]		Custody Seal Intact?	Yes / No / N/A
PROJECT: NT_1302_PFASOMP_23	ALS QUOTE NO.: 54/149/23	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER: 60612561 /	COC SEQUENCE NUMBER (Circle) COC: (1) 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: [redacted]	CONTACT PH:	OF: (1) 2 3 4 5 6 7	Other comment:
SAMPLER: [redacted]	SAMPLER MOBILE: [redacted]		
COC emailed to ALS? (YES / (NO))	Yes EDD FORMAT (or default): Esdat		
Email Reports to (will default to PM if no other addresses are listed): [redacted]			
Email Invoice to (will default to PM if no other addresses are listed): [redacted]			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
AECOM - P.H	[redacted]		[redacted]
DATE/TIME: 09.11.23 12:00	DATE/TIME: 9/11/23 12:47 pm	DATE/TIME:	DATE/TIME: 10/11/23 0830

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).		Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	EP231X - PFAS	LAB OF ORIGIN: DARWIN	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	1302_MW128_23_31109	09.11.23	W	1x PFAS	2	X		Extra Vol. for 1968C
2	1302_QC100_231109				2	X		
*	1302_QC200_231109				2	X		PLS FWD TO NMI
3	1302_QC300_231109				2	X		
4	1302_QC400_231109				2	X		
5	1302_QC500_231109				2	X		
				TOTAL				

Subcon / Forward Lab / Split WO
Lab / Analysis: NMI
Organised By / Date:
Relinquished By / Date:
Connote / Courier: QC FWD
WO No: ES2338712
Attach By PO / Internal Sheet:

Environmental Division Sydney
Work Order Reference
ES2338712

Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES2337724**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_23	Page	: 1 of 3
Order number	: 60612561	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 59290	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NT_1302_PFASOMP_23		
Sampler	: [redacted]		

Dates

Date Samples Received	: 02-Nov-2023 17:05	Issue Date	: 03-Nov-2023
Client Requested Due Date	: 09-Nov-2023	Scheduled Reporting Date	: **09-Nov-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 26.8'C DRW 11.5'C 12.3'C 11.8'C SYD - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 36 / 36

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 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.**
- **QC Forward analysis will be conducted by NMI.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2337724-001	30-Oct-2023 14:29	1302_MW215_231030	✓
ES2337724-002	30-Oct-2023 15:34	1302_MW297_231031	✓
ES2337724-003	30-Oct-2023 14:49	1302_MW303_231030	✓
ES2337724-004	31-Oct-2023 07:13	1302_MW133_231031	✓
ES2337724-005	31-Oct-2023 08:57	1302_MW205_231031	✓
ES2337724-006	30-Oct-2023 12:33	1302_MW139_231030	✓
ES2337724-007	30-Oct-2023 14:13	1302_MW103_231030	✓
ES2337724-008	31-Oct-2023 08:40	1302_MW115_231031	✓
ES2337724-009	30-Oct-2023 16:59	1302_MW107_231030	✓
ES2337724-010	30-Oct-2023 12:19	1302_MW141_231030	✓
ES2337724-011	30-Oct-2023 11:57	1302_MW144_231030	✓
ES2337724-012	30-Oct-2023 17:24	1302_MW148_231030	✓
ES2337724-013	31-Oct-2023 09:22	1302_MW156_231031	✓
ES2337724-014	30-Oct-2023 17:32	1302_MW451_231030	✓
ES2337724-015	30-Oct-2023 17:17	1302_MW452_231030	✓
ES2337724-016	31-Oct-2023 09:58	1302_MW454_231031	✓
ES2337724-017	31-Oct-2023 13:07	1302_MW185_231031	✓
ES2337724-018	31-Oct-2023 13:25	1302_MW191_231031	✓
ES2337724-019	31-Oct-2023 13:40	1302_MW190_231031	✓
ES2337724-020	31-Oct-2023 13:59	1302_MW194_231031	✓
ES2337724-021	31-Oct-2023 13:52	1302_MW195_231031	✓
ES2337724-022	31-Oct-2023 06:33	1302_MW176_231031	✓
ES2337724-023	31-Oct-2023 12:04	1302_MW180_231031	✓
ES2337724-024	31-Oct-2023 06:49	1302_MW200_231031	✓
ES2337724-025	31-Oct-2023 12:38	1302_MW209_231031	✓
ES2337724-026	31-Oct-2023 12:22	1302_MW211_231031	✓
ES2337724-027	31-Oct-2023 14:27	1302_MW210_231031	✓
ES2337724-029	30-Oct-2023 09:14	1302_QC300_231030	✓
ES2337724-030	30-Oct-2023 09:15	1302_QC400_231030	✓
ES2337724-031	30-Oct-2023 09:17	1302_QC500_231030	✓
ES2337724-032	30-Oct-2023 12:10	1302_QC100_231030	✓
ES2337724-033	31-Oct-2023 06:38	1302_QC101_231031	✓
ES2337724-035	31-Oct-2023 08:14	1302_QC301_231031	✓
ES2337724-036	31-Oct-2023 08:14	1302_QC401_231031	✓
ES2337724-037	31-Oct-2023 08:15	1302_QC501_231031	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
ES2337724-039	31-Oct-2023 13:15	1302_QC102_231031	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES2338712**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_23	Page	: 1 of 2
Order number	: 60612561	Quote number	: EP2023AECOMAU0010 (EN/004/23)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 10-Nov-2023 08:30	Issue Date	: 10-Nov-2023
Client Requested Due Date	: 16-Nov-2023	Scheduled Reporting Date	: **16-Nov-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 31.2'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 5 / 5

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 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 direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2338712-001	09-Nov-2023 00:00	1302_MW128_231109	✓
ES2338712-002	09-Nov-2023 00:00	1302_QC100_231109	✓
ES2338712-003	09-Nov-2023 00:00	1302_QC300_231109	✓
ES2338712-004	09-Nov-2023 00:00	1302_QC400_231109	✓
ES2338712-005	09-Nov-2023 00:00	1302_QC500_231109	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2337724**	Page	: 1 of 19
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 02-Nov-2023 17:05
Order number	: 60612561	Date Analysis Commenced	: 03-Nov-2023
C-O-C number	: 59290	Issue Date	: 08-Nov-2023 12:12
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_23		
Quote number	: SY/139/19 V3		
No. of samples received	: 36		
No. of samples analysed	: 36		

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]	[redacted]	[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: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- 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	1302_MW215_231030	1302_MW297_231031	1302_MW303_231030	1302_MW133_231031	1302_MW205_231031
				Sampling date / time	30-Oct-2023 14:29	30-Oct-2023 15:34	30-Oct-2023 14:49	31-Oct-2023 07:13	31-Oct-2023 08:57
Compound	CAS Number	LOR	Unit		ES2337724-001	ES2337724-002	ES2337724-003	ES2337724-004	ES2337724-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.11**	**0.74**	**4.72**	**0.43**	**0.23**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	**0.76**	**4.98**	**0.48**	**0.26**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.19**	**6.08**	**33.6**	**5.39**	**2.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.10**	**0.73**	**2.62**	**0.66**	**0.14**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.40**	**32.9**	**60.1**	**31.6**	**3.88**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	<0.2	**1.1**	<0.2	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.50**	**0.28**	**1.56**	**0.32**	**0.06**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.51**	**1.61**	**9.06**	**1.93**	**0.30**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.10**	**0.27**	**1.20**	**0.17**	**0.04**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	**0.66**	**2.78**	**0.50**	**0.10**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.05	**0.06**	<0.05	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW215_231030	1302_MW297_231031	1302_MW303_231030	1302_MW133_231031	1302_MW205_231031
				Sampling date / time	30-Oct-2023 14:29	30-Oct-2023 15:34	30-Oct-2023 14:49	31-Oct-2023 07:13	31-Oct-2023 08:57
Compound	CAS Number	LOR	Unit		ES2337724-001	ES2337724-002	ES2337724-003	ES2337724-004	ES2337724-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<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		**1.81**	<0.05	**0.05**	**0.12**	<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		**8.00**	**44.0**	**122**	**41.6**	**7.06**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.59**	**39.0**	**93.7**	**37.0**	**5.93**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**7.78**	**42.5**	**114**	**40.5**	**6.66**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**108**	**104**	**93.9**	**107**	**104**
13C8-PFOA	----	0.02	%		**106**	**110**	**110**	**117**	**106**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW139_231030	1302_MW103_231030	1302_MW115_231031	1302_MW107_231030	1302_MW141_231030
				Sampling date / time	30-Oct-2023 12:33	30-Oct-2023 14:13	31-Oct-2023 08:40	30-Oct-2023 16:59	30-Oct-2023 12:19
Compound	CAS Number	LOR	Unit		ES2337724-006	ES2337724-007	ES2337724-008	ES2337724-009	ES2337724-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.05**	**0.24**	**3.92**	**0.23**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	**0.35**	**3.89**	**0.31**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.41**	**3.66**	**27.2**	**2.67**	**0.15**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.03**	**0.27**	**4.38**	**0.18**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.15**	**9.93**	**201**	**5.48**	**0.17**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	**0.13**	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.1**	**0.9**	**0.1**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.36**	**1.54**	**0.27**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.08**	**0.71**	**7.22**	**0.59**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.10**	**0.81**	**0.09**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	**0.19**	**2.36**	**0.14**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	**0.16**	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW139_231030	1302_MW103_231030	1302_MW115_231031	1302_MW107_231030	1302_MW141_231030
				Sampling date / time	30-Oct-2023 12:33	30-Oct-2023 14:13	31-Oct-2023 08:40	30-Oct-2023 16:59	30-Oct-2023 12:19
Compound	CAS Number	LOR	Unit		ES2337724-006	ES2337724-007	ES2337724-008	ES2337724-009	ES2337724-010
					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	<0.12	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.05	<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	**1.89**	<0.05	**1.21**	<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		**1.79**	**17.8**	**254**	**11.3**	**0.32**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.56**	**13.6**	**228**	**8.15**	**0.32**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.71**	**17.2**	**245**	**10.8**	**0.32**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**107**	**97.8**	**95.1**	**99.8**
13C8-PFOA	----	0.02	%		**104**	**101**	**106**	**104**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW144_231030	1302_MW148_231030	1302_MW156_231031	1302_MW451_231030	1302_MW452_231030
				Sampling date / time	30-Oct-2023 11:57	30-Oct-2023 17:24	31-Oct-2023 09:22	30-Oct-2023 17:32	30-Oct-2023 17:17
Compound	CAS Number	LOR	Unit		ES2337724-011	ES2337724-012	ES2337724-013	ES2337724-014	ES2337724-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.18**	**0.18**	**0.14**	<0.02	**0.09**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.19**	**0.21**	**0.16**	<0.02	**0.13**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.52**	**2.12**	**1.44**	<0.01	**1.20**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.11**	**0.20**	**0.12**	<0.02	**0.07**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.08**	**5.67**	**3.81**	<0.01	**2.56**
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**	**0.05**	**0.06**	<0.02	**0.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.24**	**0.24**	**0.26**	<0.02	**0.19**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	**0.04**	**0.03**	<0.02	**0.04**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	**0.10**	**0.07**	<0.01	**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: WATER (Matrix: WATER)				Sample ID	1302_MW144_231030	1302_MW148_231030	1302_MW156_231031	1302_MW451_231030	1302_MW452_231030
				Sampling date / time	30-Oct-2023 11:57	30-Oct-2023 17:24	31-Oct-2023 09:22	30-Oct-2023 17:32	30-Oct-2023 17:17
Compound	CAS Number	LOR	Unit		ES2337724-011	ES2337724-012	ES2337724-013	ES2337724-014	ES2337724-015
					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	**0.14**
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		**5.45**	**8.81**	**6.09**	<0.01	**4.56**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.60**	**7.79**	**5.25**	<0.01	**3.76**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**5.15**	**8.40**	**5.81**	<0.01	**4.36**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**110**	**102**	**101**	**97.8**
13C8-PFOA	----	0.02	%		**103**	**105**	**106**	**99.2**	**105**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW454_231031	1302_MW185_231031	1302_MW191_231031	1302_MW190_231031	1302_MW194_231031
				Sampling date / time	31-Oct-2023 09:58	31-Oct-2023 13:07	31-Oct-2023 13:25	31-Oct-2023 13:40	31-Oct-2023 13:59
Compound	CAS Number	LOR	Unit		ES2337724-016	ES2337724-017	ES2337724-018	ES2337724-019	ES2337724-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.72**	**0.04**	**0.06**	**0.08**	**0.08**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.79**	**0.04**	**0.06**	**0.09**	**0.09**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**12.2**	**0.24**	**0.64**	**0.71**	**0.73**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.92**	<0.02	**0.04**	**0.05**	**0.06**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**26.1**	**0.13**	**1.62**	**1.14**	**1.78**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.63**	<0.02	**0.04**	**0.03**	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.94**	**0.03**	**0.13**	**0.15**	**0.16**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.34**	<0.02	<0.02	<0.02	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.66**	**0.01**	**0.04**	**0.04**	**0.04**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW454_231031	1302_MW185_231031	1302_MW191_231031	1302_MW190_231031	1302_MW194_231031
				Sampling date / time	31-Oct-2023 09:58	31-Oct-2023 13:07	31-Oct-2023 13:25	31-Oct-2023 13:40	31-Oct-2023 13:59
Compound	CAS Number	LOR	Unit		ES2337724-016	ES2337724-017	ES2337724-018	ES2337724-019	ES2337724-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<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		**47.7**	**0.49**	**2.63**	**2.29**	**3.00**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**38.3**	**0.37**	**2.26**	**1.85**	**2.51**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**45.0**	**0.45**	**2.53**	**2.15**	**2.85**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**118**	**103**	**104**	**97.0**	**104**
13C8-PFOA	----	0.02	%		**109**	**102**	**102**	**107**	**107**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW195_231031	1302_MW176_231031	1302_MW180_231031	1302_MW200_231031	1302_MW209_231031
				Sampling date / time	31-Oct-2023 13:52	31-Oct-2023 06:33	31-Oct-2023 12:04	31-Oct-2023 06:49	31-Oct-2023 12:38
Compound	CAS Number	LOR	Unit		ES2337724-021	ES2337724-022	ES2337724-023	ES2337724-024	ES2337724-025
					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	**0.07**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.08**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	**0.03**	**0.05**	**0.63**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	**0.07**	**0.02**	**0.89**	<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	**0.08**	<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: WATER (Matrix: WATER)				Sample ID	1302_MW195_231031	1302_MW176_231031	1302_MW180_231031	1302_MW200_231031	1302_MW209_231031
				Sampling date / time	31-Oct-2023 13:52	31-Oct-2023 06:33	31-Oct-2023 12:04	31-Oct-2023 06:49	31-Oct-2023 12:38
Compound	CAS Number	LOR	Unit		ES2337724-021	ES2337724-022	ES2337724-023	ES2337724-024	ES2337724-025
					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		<0.05	<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		**0.11**	**0.10**	**0.07**	**1.82**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.11**	**0.10**	**0.07**	**1.52**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.11**	**0.10**	**0.07**	**1.70**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.1**	**102**	**98.2**	**103**	**102**
13C8-PFOA	----	0.02	%		**110**	**113**	**108**	**109**	**108**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW211_231031	1302_MW210_231031	1302_QC300_231030	1302_QC400_231030	1302_QC500_231030
				Sampling date / time	31-Oct-2023 12:22	31-Oct-2023 14:27	30-Oct-2023 09:14	30-Oct-2023 09:15	30-Oct-2023 09:17
Compound	CAS Number	LOR	Unit		ES2337724-026	ES2337724-027	ES2337724-029	ES2337724-030	ES2337724-031
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.07**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.09**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.09**	**0.80**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.07**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.23**	**2.49**	<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	**0.03**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.11**	<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	**0.05**	<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	1302_MW211_231031	1302_MW210_231031	1302_QC300_231030	1302_QC400_231030	1302_QC500_231030
				Sampling date / time	31-Oct-2023 12:22	31-Oct-2023 14:27	30-Oct-2023 09:14	30-Oct-2023 09:15	30-Oct-2023 09:17
Compound	CAS Number	LOR	Unit		ES2337724-026	ES2337724-027	ES2337724-029	ES2337724-030	ES2337724-031
					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		**0.32**	**3.71**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.32**	**3.29**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.32**	**3.55**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**109**	**104**	**96.4**	**90.3**	**96.9**
13C8-PFOA	----	0.02	%		**108**	**109**	**98.4**	**106**	**105**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC100_231030	1302_QC101_231031	1302_QC301_231031	1302_QC401_231031	1302_QC501_231031
				Sampling date / time	30-Oct-2023 12:10	31-Oct-2023 06:38	31-Oct-2023 08:14	31-Oct-2023 08:14	31-Oct-2023 08:15
Compound	CAS Number	LOR	Unit		ES2337724-032	ES2337724-033	ES2337724-035	ES2337724-036	ES2337724-037
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.16**	<0.02	<0.02	<0.02	<0.02
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		**1.34**	**0.03**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.08**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.52**	**0.07**	<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		**0.04**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.22**	<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		**0.06**	<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	1302_QC100_231030	1302_QC101_231031	1302_QC301_231031	1302_QC401_231031	1302_QC501_231031
				Sampling date / time	30-Oct-2023 12:10	31-Oct-2023 06:38	31-Oct-2023 08:14	31-Oct-2023 08:14	31-Oct-2023 08:15
Compound	CAS Number	LOR	Unit		ES2337724-032	ES2337724-033	ES2337724-035	ES2337724-036	ES2337724-037
					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		**4.61**	**0.10**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**3.86**	**0.10**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**4.36**	**0.10**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.6**	**102**	**94.8**	**94.6**	**99.5**
13C8-PFOA	----	0.02	%		**108**	**109**	**103**	**102**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC102_231031	----	----	----	----
				Sampling date / time	31-Oct-2023 13:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2337724-039	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.03**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.22**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.11**	----	----	----	----
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: WATER (Matrix: WATER)				Sample ID	1302_QC102_231031	----	----	----	----
				Sampling date / time	31-Oct-2023 13:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2337724-039	--------	--------	--------	--------
					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		**0.43**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.33**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.40**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.0**	----	----	----	----
13C8-PFOA	----	0.02	%		**106**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

CERTIFICATE OF ANALYSIS

Work Order	: **ES2338712**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 10-Nov-2023 08:30
Order number	: 60612561	Date Analysis Commenced	: 10-Nov-2023
C-O-C number	: ----	Issue Date	: 14-Nov-2023 14:48
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/23		
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]	[redacted]	[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	1302_MW128_231109	1302_QC100_231109	1302_QC300_231109	1302_QC400_231109	1302_QC500_231109
				Sampling date / time	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00
Compound	CAS Number	LOR	Unit		ES2338712-001	ES2338712-002	ES2338712-003	ES2338712-004	ES2338712-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.11**	**0.12**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	**0.12**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.30**	**1.35**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.08**	**0.08**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.26**	**3.36**	<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		**0.24**	**0.24**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.41**	**0.43**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.06**	**0.06**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.10**	**0.11**	<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	1302_MW128_231109	1302_QC100_231109	1302_QC300_231109	1302_QC400_231109	1302_QC500_231109
				Sampling date / time	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00
Compound	CAS Number	LOR	Unit		ES2338712-001	ES2338712-002	ES2338712-003	ES2338712-004	ES2338712-005
					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		**0.80**	**0.77**	<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		**6.48**	**6.64**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.56**	**4.71**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**6.28**	**6.44**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**92.2**	**90.0**	**95.4**	**99.4**	**97.3**
13C8-PFOA	----	0.02	%		**100**	**98.7**	**97.8**	**98.8**	**98.8**

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2337724**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 02-Nov-2023
Order number	: 60612561	Date Analysis Commenced	: 03-Nov-2023
C-O-C number	: 59290	Issue Date	: 08-Nov-2023
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_23		
Quote number	: SY/139/19 V3		
No. of samples received	: 36		
No. of samples analysed	: 36		

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]	[redacted]	[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: 5403994)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	78.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	81.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	79.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	95.3	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	98.5	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	100	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5403995)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	75.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	77.3	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	76.8	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	83.2	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	85.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	81.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5403994)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	76.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	79.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	82.7	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	90.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	78.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	77.9	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	78.3	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	89.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.1	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	87.7	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5403995)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	83.3	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	80.1	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	81.7	72.0	130

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: 5403995) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	84.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	79.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	80.5	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	83.5	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	82.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5403994)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	95.4	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	91.8	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	84.4	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	86.7	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	85.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	82.7	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5403995)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	79.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	83.7	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	84.7	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	80.2	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	86.7	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	82.7	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	81.3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5403994)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	80.0	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	87.8	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	86.6	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	76.1	71.4	144

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: 5403995)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	78.8	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	82.8	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	86.7	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	81.2	71.4	144

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.**

QUALITY CONTROL REPORT

Work Order	: **ES2338712**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 10-Nov-2023
Order number	: 60612561	Date Analysis Commenced	: 10-Nov-2023
C-O-C number	: ----	Issue Date	: 14-Nov-2023
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/23		
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 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]	[redacted]	[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: 5417257)									
ES2338712-001	1302_MW128_231109	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	1.30	1.27	2.4	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	3.26	3.49	7.0	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.11	0.12	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.12	0.13	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.08	0.07	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: 5417257)									
ES2338712-001	1302_MW128_231109	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.10	0.10	0.0	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.24	0.24	0.0	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.41	0.41	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.06	0.06	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: 5417257)									
ES2338712-001	1302_MW128_231109	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: 5417257) - continued									
ES2338712-001	1302_MW128_231109	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: 5417257)									
ES2338712-001	1302_MW128_231109	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	0.80	0.80	0.0	0% - 50%
		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: 5417257)									
ES2338712-001	1302_MW128_231109	EP231X: Sum of PFAS	----	0.01	µg/L	6.48	6.79	4.7	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: 5417257)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	92.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	98.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	101	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	0.25 µg/L	95.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	87.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5417257)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	104	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	112	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	104	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	113	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	105	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	118	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5417257)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	116	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	117	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	105	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	106	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	102	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: 5417257)								

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: 5417257) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	102	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	106	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	113	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	89.5	71.4	144

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: 5417257)							
ES2338712-001	1302_MW128_231109	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	91.9	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	96.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	112	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	97.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5417257)							
ES2338712-001	1302_MW128_231109	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	100	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	107	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	110	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	102	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	96.8	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	106	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	108	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.7	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	92.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	118	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5417257)							
ES2338712-001	1302_MW128_231109	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	111	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	117	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	102	62.6	147

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: 5417257) - continued							
ES2338712-001	1302_MW128_231109	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	104	66.0	145
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	103	57.6	145
		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	99.1	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5417257)							
ES2338712-001	1302_MW128_231109	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	85.7	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	107	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	111	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	86.4	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2337724**	Page	: 1 of 8
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 02-Nov-2023
Site	: NT_1302_PFASOMP_23	Issue Date	: 08-Nov-2023
Sampler	: [redacted]	No. of samples received	: 36
Order number	: 60612561	No. of samples analysed	: 36

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	36	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	36	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)								
1302_MW297_231031,	1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X)								
1302_MW215_231030,	1302_MW139_231030,	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
1302_MW103_231030,	1302_MW107_231030,							
1302_MW141_231030,	1302_MW144_231030,							
1302_MW148_231030,	1302_MW451_231030,							
1302_MW452_231030,	1302_QC300_231030,							
1302_QC400_231030,	1302_QC500_231030,							
1302_QC100_231030								
HDPE (no PTFE) (EP231X)								
1302_MW133_231031,	1302_MW115_231031,	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
1302_MW454_231031								
HDPE (no PTFE) (EP231X)								
1302_MW205_231031,	1302_MW156_231031,	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓
1302_MW185_231031,	1302_MW191_231031,							
1302_MW190_231031,	1302_MW194_231031,							
1302_MW195_231031,	1302_MW176_231031,							
1302_MW180_231031,	1302_MW200_231031,							
1302_MW209_231031,	1302_MW211_231031,							
1302_MW210_231031,	1302_QC101_231031,							
1302_QC301_231031,	1302_QC401_231031,							
1302_QC501_231031,	1302_QC102_231031							

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) 1302_MW297_231031, 1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW215_231030, 1302_MW139_231030, 1302_MW103_231030, 1302_MW107_231030, 1302_MW141_231030, 1302_MW144_231030, 1302_MW148_231030, 1302_MW451_231030, 1302_MW452_231030, 1302_QC300_231030, 1302_QC400_231030, 1302_QC500_231030, 1302_QC100_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW133_231031, 1302_MW115_231031, 1302_MW454_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW205_231031, 1302_MW156_231031, 1302_MW185_231031, 1302_MW191_231031, 1302_MW190_231031, 1302_MW194_231031, 1302_MW195_231031, 1302_MW176_231031, 1302_MW180_231031, 1302_MW200_231031, 1302_MW209_231031, 1302_MW211_231031, 1302_MW210_231031, 1302_QC101_231031, 1302_QC301_231031, 1302_QC401_231031, 1302_QC501_231031, 1302_QC102_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓

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) 1302_MW297_231031, 1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW215_231030, 1302_MW139_231030, 1302_MW103_231030, 1302_MW107_231030, 1302_MW141_231030, 1302_MW144_231030, 1302_MW148_231030, 1302_MW451_231030, 1302_MW452_231030, 1302_QC300_231030, 1302_QC400_231030, 1302_QC500_231030, 1302_QC100_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW133_231031, 1302_MW115_231031, 1302_MW454_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW205_231031, 1302_MW156_231031, 1302_MW185_231031, 1302_MW191_231031, 1302_MW190_231031, 1302_MW194_231031, 1302_MW195_231031, 1302_MW176_231031, 1302_MW180_231031, 1302_MW200_231031, 1302_MW209_231031, 1302_MW211_231031, 1302_MW210_231031, 1302_QC101_231031, 1302_QC301_231031, 1302_QC401_231031, 1302_QC501_231031, 1302_QC102_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓

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) 1302_MW297_231031, 1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW215_231030, 1302_MW139_231030, 1302_MW103_231030, 1302_MW107_231030, 1302_MW141_231030, 1302_MW144_231030, 1302_MW148_231030, 1302_MW451_231030, 1302_MW452_231030, 1302_QC300_231030, 1302_QC400_231030, 1302_QC500_231030, 1302_QC100_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW133_231031, 1302_MW115_231031, 1302_MW454_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW205_231031, 1302_MW156_231031, 1302_MW185_231031, 1302_MW191_231031, 1302_MW190_231031, 1302_MW194_231031, 1302_MW195_231031, 1302_MW176_231031, 1302_MW180_231031, 1302_MW200_231031, 1302_MW209_231031, 1302_MW211_231031, 1302_MW210_231031, 1302_QC101_231031, 1302_QC301_231031, 1302_QC401_231031, 1302_QC501_231031, 1302_QC102_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓

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) 1302_MW297_231031, 1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW215_231030, 1302_MW139_231030, 1302_MW103_231030, 1302_MW107_231030, 1302_MW141_231030, 1302_MW144_231030, 1302_MW148_231030, 1302_MW451_231030, 1302_MW452_231030, 1302_QC300_231030, 1302_QC400_231030, 1302_QC500_231030, 1302_QC100_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW133_231031, 1302_MW115_231031, 1302_MW454_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW205_231031, 1302_MW156_231031, 1302_MW185_231031, 1302_MW191_231031, 1302_MW190_231031, 1302_MW194_231031, 1302_MW195_231031, 1302_MW176_231031, 1302_MW180_231031, 1302_MW200_231031, 1302_MW209_231031, 1302_MW211_231031, 1302_MW210_231031, 1302_QC101_231031, 1302_QC301_231031, 1302_QC401_231031, 1302_QC501_231031, 1302_QC102_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓

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	36	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	36	**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.

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2338712**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 10-Nov-2023
Site	: ----	Issue Date	: 14-Nov-2023
Sampler	: [redacted]	No. of samples received	: 5
Order number	: 60612561	No. of samples analysed	: 5

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: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	ES2338712--001	1302_MW128_231109	**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	ES2338712--001	1302_MW128_231109	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	1				
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	20	5.00	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)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓

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)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓

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	20	**5.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**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.

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QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO09/231106 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	114	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	97	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	99	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	105	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	109	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	104	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	104	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	111	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	99	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	97	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	98	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	103	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	107	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	111	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	100	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	96	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	102	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	106	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	109	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	105	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	86	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	88	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	109	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO09/231113 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
PFBA (375-22-4)	NR70	0.002	<0.002	NA	NA	NA	108	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	NA	NA	NA	106	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	NA	NA	NA	106	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	NA	NA	NA	110	NA
PFOA (335-67-1)	NR70	0.001	<0.001	NA	NA	NA	117	NA
PFNA (375-95-1)	NR70	0.001	<0.001	NA	NA	NA	102	NA
PFDA (335-76-2)	NR70	0.001	<0.001	NA	NA	NA	112	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	NA	NA	NA	119	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	NA	NA	NA	110	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	NA	NA	NA	111	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	NA	NA	NA	121	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	NA	NA	NA	114	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	NA	NA	NA	113	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	NA	NA	NA	124	NA
PFBS (375-73-5)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	NA	NA	NA	104	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	NA	NA	NA	108	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	NA	NA	NA	98	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	NA	NA	NA	108	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	NA	NA	NA	102	NA
PFDS (335-77-3)	NR70	0.001	<0.001	NA	NA	NA	100	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	NA	NA	NA	106	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	NA	NA	NA	112	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	NA	NA	NA	126	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	NA	NA	NA	102	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	NA	NA	NA	97	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	NA	NA	NA	116	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	NA	NA	NA	121	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	NA	NA	NA	104	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	NA	NA	NA	110	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	NA	NA	NA	92	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	NA	NA	NA	84	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	NA	NA	NA	122	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

[redacted]

Date: **21/11/2023**

[redacted]

National Measurement Institute

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1410783

Client	: [redacted]	**Job No.**	: AECO09/231106
		Quote No.	: QT-02232
		Order No.	: 60612561
		Date Received	: 06-NOV-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/023146	1302_QC200_231030	WATER 30/10/2023 01:41 PM
N23/023147	1302_QC201_231031	WATER 31/10/2023 08:09 AM
N23/023148	1302_QC202_231031	WATER 31/10/2023 02:43 PM

Lab Reg No.		N23/023146	N23/023147	N23/023148		
Date Sampled		30-OCT-2023	31-OCT-2023	31-OCT-2023		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05	<0.05	<0.05		NR70
PFPeA (2706-90-3)	ug/L	0.045	<0.02	<0.02		NR70
PFHxA (307-24-4)	ug/L	0.24	<0.01	0.021		NR70
PFHpA (375-85-9)	ug/L	0.025	<0.01	<0.01		NR70
PFOA (335-67-1)	ug/L	0.052	<0.01	<0.01		NR70
PFNA (375-95-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFDA (335-76-2)	ug/L	<0.01	<0.01	<0.01		NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01	<0.01		NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02	<0.02		NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02	<0.02		NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02	<0.02		NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05	<0.05		NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01	<0.01		NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01	<0.01		NR70
PFPeS (2706-91-4)	ug/L	0.15	<0.01	0.027		NR70
PFHxS (355-46-4)	ug/L	1.4	0.025	0.24		NR70
PFHpS (375-92-8)	ug/L	0.052	<0.01	<0.01		NR70
PFOS (1763-23-1)	ug/L	1.7	<0.02	0.058		NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFBS (375-73-5)	ug/L	0.17	<0.01	0.038		NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01	<0.01		NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02	<0.02		NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02	<0.02		NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01	<0.01		NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01	<0.01		NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05	<0.05		NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05	<0.05		NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/023146	N23/023147	N23/023148		
Date Sampled		30-OCT-2023	31-OCT-2023	31-OCT-2023		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01	<0.01		NR70
6:2 FTS (27619-97-2)	ug/L	<0.01	<0.01	<0.01		NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01	<0.01		NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01	<0.01		NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02	<0.02		NR70
PFBA (Surrogate Recovery)	%	108	102	107		NR70
PFPeA (Surrogate Recovery)	%	105	97	106		NR70
PFHxA (Surrogate Recovery)	%	116	110	110		NR70
PFHpA (Surrogate Recovery)	%	111	101	109		NR70
PFOA (Surrogate Recovery)	%	111	103	104		NR70
PFNA (Surrogate Recovery)	%	100	90	102		NR70
PFDA (Surrogate Recovery)	%	102	94	103		NR70
PFUdA (Surrogate Recovery)	%	99	96	99		NR70
PFDoA (Surrogate Recovery)	%	93	86	93		NR70
PFTeDA (Surrogate Recovery)	%	85	82	90		NR70
PFHxDA (Surrogate Recovery)	%	120	103	97		NR70
FOUEA (Surrogate Recovery)	%	102	89	86		NR70
PFBS (Surrogate Recovery)	%	128	112	119		NR70
PFHxS (Surrogate Recovery)	%	121	118	114		NR70
PFOS (Surrogate Recovery)	%	120	116	110		NR70
PFOSA (Surrogate Recovery)	%	91	89	98		NR70
N-MeFOSA (Surrogate Recovery)	%	101	88	89		NR70
N-EtFOSA (Surrogate Recovery)	%	97	85	82		NR70
N-MeFOSAA (Surrogate Recovery)	%	86	82	89		NR70
N-EtFOSAA (Surrogate Recovery)	%	86	83	92		NR70
N-MeFOSE (Surrogate Recovery)	%	112	103	101		NR70
N-EtFOSE (Surrogate Recovery)	%	102	96	95		NR70
4:2 FTS (Surrogate Recovery)	%	129	110	131		NR70
6:2 FTS (Surrogate Recovery)	%	103	92	98		NR70
8:2 FTS (Surrogate Recovery)	%	85	91	97		NR70
8:2 diPAP (Surrogate Recovery)	%	83	93	78		NR70
Dates						
Date extracted		10-NOV-2023	10-NOV-2023	10-NOV-2023		
Date analysed		10-NOV-2023	10-NOV-2023	10-NOV-2023		

N23/023146
To
N23/023148

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

[redacted]

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ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

This Report supersedes reports: *RN1410755*

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

REPORT OF ANALYSIS

Report No. RN1411490

Client	: [redacted]	**Job No.**	: AECO09/231113
		Quote No.	: QT-02232
		Order No.	: 60612561
		Date Received	: 13-NOV-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/023723	1302_QC200_231109	WATER 09/11/23

Lab Reg No.		N23/023723				
Date Sampled		09-NOV-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	0.092				NR70
PFPeA (2706-90-3)	ug/L	0.21				NR70
PFHxA (307-24-4)	ug/L	0.37				NR70
PFHpA (375-85-9)	ug/L	0.052				NR70
PFOA (335-67-1)	ug/L	0.083				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	0.098				NR70
PFHxS (355-46-4)	ug/L	1.2				NR70
PFHpS (375-92-8)	ug/L	0.050				NR70
PFOS (1763-23-1)	ug/L	3.9				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	0.11				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	0.65				NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/023723				
Date Sampled		09-NOV-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	107				NR70
PFPeA (Surrogate Recovery)	%	109				NR70
PFHxA (Surrogate Recovery)	%	112				NR70
PFHpA (Surrogate Recovery)	%	114				NR70
PFOA (Surrogate Recovery)	%	110				NR70
PFNA (Surrogate Recovery)	%	101				NR70
PFDA (Surrogate Recovery)	%	109				NR70
PFUdA (Surrogate Recovery)	%	106				NR70
PFDoA (Surrogate Recovery)	%	105				NR70
PFTeDA (Surrogate Recovery)	%	106				NR70
PFHxDA (Surrogate Recovery)	%	110				NR70
FOUEA (Surrogate Recovery)	%	78				NR70
PFBS (Surrogate Recovery)	%	121				NR70
PFHxS (Surrogate Recovery)	%	116				NR70
PFOS (Surrogate Recovery)	%	110				NR70
PFOSA (Surrogate Recovery)	%	92				NR70
N-MeFOSA (Surrogate Recovery)	%	70				NR70
N-EtFOSA (Surrogate Recovery)	%	69				NR70
N-MeFOSAA (Surrogate Recovery)	%	90				NR70
N-EtFOSAA (Surrogate Recovery)	%	93				NR70
N-MeFOSE (Surrogate Recovery)	%	87				NR70
N-EtFOSE (Surrogate Recovery)	%	81				NR70
4:2 FTS (Surrogate Recovery)	%	114				NR70
6:2 FTS (Surrogate Recovery)	%	119				NR70
8:2 FTS (Surrogate Recovery)	%	108				NR70
8:2 diPAP (Surrogate Recovery)	%	90				NR70
Dates						
Date extracted		16-NOV-2023				
Date analysed		16-NOV-2023				

N23/023723
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

REPORT OF ANALYSIS

Lab Reg No.		N23/023723				
Date Sampled		09-NOV-2023				
	Units					Method

[redacted]

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

This Report supersedes reports: *RN1411453*

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES2337477**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_23	Page	: 1 of 7
Order number	: ----	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 31-Oct-2023 09:41	Issue Date	: 06-Nov-2023
Client Requested Due Date	: 04-Dec-2023	Scheduled Reporting Date	: **04-Dec-2023**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 1.4, 8.9, 5.8'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 59 / 59

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
- **Samples QC201, QC202, QC203 and QC204 have been forwarded to NMI.**
- **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 direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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.

Method / Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS : EP231X		
1302_BIOAFA315_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA316_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA317_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA318_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA319_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA320_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA321_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA322_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA323_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA324_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA325_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA326_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA327_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA328_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA329_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA330_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA331_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA332_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA333_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA334_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA335_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA336_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA337_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA338_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA339_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA340_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA341_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA342_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA343_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA344_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA345_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA346_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA347_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA348_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA349_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA350_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA351_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA352_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA353_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA354_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA355_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA356_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA357_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA358_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA359_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA360_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA361_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA362_231025	- Snap Lock Bag	- Frozen Sample
1302_QC148_231017	- Snap Lock Bag	- Frozen Sample
1302_QC149_231017	- Snap Lock Bag	- Frozen Sample
1302_QC150_231017	- Snap Lock Bag	- Frozen Sample
1302_QC151_231017	- Snap Lock Bag	- Frozen Sample
1302_QC152_231018	- Snap Lock Bag	- Frozen Sample
1302_QC153_231018	- Snap Lock Bag	- Frozen Sample
1302_QC154_231018	- Snap Lock Bag	- Frozen Sample
1302_QC155_231018	- Snap Lock Bag	- Frozen Sample
PFOS - Linear/Branched Speciation : EP231-PFOS-SP		
1302_BIOAFA315_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA316_231017	- Snap Lock Bag	- Frozen Sample

Method *Sample ID*	Sample Container Received	Preferred Sample Container for Analysis
PFOS - Linear/Branched Speciation : EP231-PFOS-SP		
1302_BIOAFA317_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA318_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA319_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA320_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA321_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA322_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA323_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA324_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA325_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA326_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA327_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA328_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA329_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA330_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA331_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA332_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA333_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA334_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA335_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA336_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA337_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA338_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA339_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA340_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA341_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA342_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA343_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA344_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA345_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA346_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA347_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA348_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA349_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA350_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA351_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA352_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA353_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA354_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA355_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA356_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA357_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA358_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA359_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA360_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA361_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA362_231025	- Snap Lock Bag	- Frozen Sample
1302_QC148_231017	- Snap Lock Bag	- Frozen Sample
1302_QC149_231017	- Snap Lock Bag	- Frozen Sample
1302_QC150_231017	- Snap Lock Bag	- Frozen Sample
1302_QC151_231017	- Snap Lock Bag	- Frozen Sample
1302_QC152_231018	- Snap Lock Bag	- Frozen Sample
1302_QC153_231018	- Snap Lock Bag	- Frozen Sample
1302_QC154_231018	- Snap Lock Bag	- Frozen Sample
1302_QC155_231018	- Snap Lock Bag	- Frozen Sample

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

ES2337477-001 : [17-Oct-2023] : 1302_BIOAFA315_231017
ES2337477-002 : [17-Oct-2023] : 1302_BIOAFA316_231017
ES2337477-003 : [17-Oct-2023] : 1302_BIOAFA317_231017
ES2337477-004 : [17-Oct-2023] : 1302_BIOAFA318_231017
ES2337477-005 : [17-Oct-2023] : 1302_BIOAFA319_231017

ES2337477-006	: [17-Oct-2023]	: 1302_BIOAFA320_231017
ES2337477-007	: [17-Oct-2023]	: 1302_BIOAFA321_231017
ES2337477-008	: [17-Oct-2023]	: 1302_BIOAFA322_231017
ES2337477-009	: [17-Oct-2023]	: 1302_BIOAFA323_231017
ES2337477-010	: [17-Oct-2023]	: 1302_BIOAFA324_231017
ES2337477-011	: [17-Oct-2023]	: 1302_BIOAFA325_231017
ES2337477-012	: [17-Oct-2023]	: 1302_BIOAFA326_231017
ES2337477-013	: [17-Oct-2023]	: 1302_BIOAFA327_231017
ES2337477-014	: [17-Oct-2023]	: 1302_BIOAFA328_231017
ES2337477-015	: [17-Oct-2023]	: 1302_BIOAFA329_231017
ES2337477-016	: [17-Oct-2023]	: 1302_BIOAFA330_231017
ES2337477-017	: [18-Oct-2023]	: 1302_BIOAFA331_231018
ES2337477-018	: [18-Oct-2023]	: 1302_BIOAFA332_231018
ES2337477-019	: [18-Oct-2023]	: 1302_BIOAFA333_231018
ES2337477-020	: [18-Oct-2023]	: 1302_BIOAFA334_231018
ES2337477-021	: [18-Oct-2023]	: 1302_BIOAFA335_231018
ES2337477-022	: [18-Oct-2023]	: 1302_BIOAFA336_231018
ES2337477-023	: [18-Oct-2023]	: 1302_BIOAFA337_231018
ES2337477-024	: [18-Oct-2023]	: 1302_BIOAFA338_231018
ES2337477-025	: [18-Oct-2023]	: 1302_BIOAFA339_231018
ES2337477-026	: [18-Oct-2023]	: 1302_BIOAFA340_231018
ES2337477-027	: [18-Oct-2023]	: 1302_BIOAFA341_231018
ES2337477-028	: [18-Oct-2023]	: 1302_BIOAFA342_231018
ES2337477-029	: [18-Oct-2023]	: 1302_BIOAFA343_231018
ES2337477-030	: [18-Oct-2023]	: 1302_BIOAFA344_231018
ES2337477-031	: [18-Oct-2023]	: 1302_BIOAFA345_231018
ES2337477-032	: [18-Oct-2023]	: 1302_BIOAFA346_231018
ES2337477-033	: [18-Oct-2023]	: 1302_BIOAFA347_231018
ES2337477-034	: [17-Oct-2023]	: 1302_BIOAFA348_231017
ES2337477-035	: [17-Oct-2023]	: 1302_BIOAFA349_231017
ES2337477-036	: [17-Oct-2023]	: 1302_BIOAFA350_231017
ES2337477-037	: [17-Oct-2023]	: 1302_BIOAFA351_231017
ES2337477-038	: [17-Oct-2023]	: 1302_BIOAFA352_231017
ES2337477-039	: [25-Oct-2023]	: 1302_BIOAFA353_231025
ES2337477-040	: [25-Oct-2023]	: 1302_BIOAFA354_231025
ES2337477-041	: [25-Oct-2023]	: 1302_BIOAFA355_231025
ES2337477-042	: [25-Oct-2023]	: 1302_BIOAFA356_231025
ES2337477-043	: [25-Oct-2023]	: 1302_BIOAFA357_231025
ES2337477-044	: [25-Oct-2023]	: 1302_BIOAFA358_231025
ES2337477-045	: [25-Oct-2023]	: 1302_BIOAFA359_231025
ES2337477-046	: [25-Oct-2023]	: 1302_BIOAFA360_231025
ES2337477-047	: [25-Oct-2023]	: 1302_BIOAFA361_231025
ES2337477-048	: [25-Oct-2023]	: 1302_BIOAFA362_231025

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: **BIOTA**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	BIOTA - EP231X PFAS - Full Suite (28 analytes) - includes PFOS
ES2337477-001	17-Oct-2023 00:00	1302_BIOAFA315_231017	✓
ES2337477-002	17-Oct-2023 00:00	1302_BIOAFA316_231017	✓
ES2337477-003	17-Oct-2023 00:00	1302_BIOAFA317_231017	✓
ES2337477-004	17-Oct-2023 00:00	1302_BIOAFA318_231017	✓
ES2337477-005	17-Oct-2023 00:00	1302_BIOAFA319_231017	✓
ES2337477-006	17-Oct-2023 00:00	1302_BIOAFA320_231017	✓
ES2337477-007	17-Oct-2023 00:00	1302_BIOAFA321_231017	✓
ES2337477-008	17-Oct-2023 00:00	1302_BIOAFA322_231017	✓
ES2337477-009	17-Oct-2023 00:00	1302_BIOAFA323_231017	✓
ES2337477-010	17-Oct-2023 00:00	1302_BIOAFA324_231017	✓
ES2337477-011	17-Oct-2023 00:00	1302_BIOAFA325_231017	✓
ES2337477-012	17-Oct-2023 00:00	1302_BIOAFA326_231017	✓
ES2337477-013	17-Oct-2023 00:00	1302_BIOAFA327_231017	✓
ES2337477-014	17-Oct-2023 00:00	1302_BIOAFA328_231017	✓
ES2337477-015	17-Oct-2023 00:00	1302_BIOAFA329_231017	✓
ES2337477-016	17-Oct-2023 00:00	1302_BIOAFA330_231017	✓
ES2337477-017	18-Oct-2023 00:00	1302_BIOAFA331_231018	✓
ES2337477-018	18-Oct-2023 00:00	1302_BIOAFA332_231018	✓
ES2337477-019	18-Oct-2023 00:00	1302_BIOAFA333_231018	✓
ES2337477-020	18-Oct-2023 00:00	1302_BIOAFA334_231018	✓
ES2337477-021	18-Oct-2023 00:00	1302_BIOAFA335_231018	✓
ES2337477-022	18-Oct-2023 00:00	1302_BIOAFA336_231018	✓
ES2337477-023	18-Oct-2023 00:00	1302_BIOAFA337_231018	✓
ES2337477-024	18-Oct-2023 00:00	1302_BIOAFA338_231018	✓
ES2337477-025	18-Oct-2023 00:00	1302_BIOAFA339_231018	✓
ES2337477-026	18-Oct-2023 00:00	1302_BIOAFA340_231018	✓
ES2337477-027	18-Oct-2023 00:00	1302_BIOAFA341_231018	✓
ES2337477-028	18-Oct-2023 00:00	1302_BIOAFA342_231018	✓
ES2337477-029	18-Oct-2023 00:00	1302_BIOAFA343_231018	✓
ES2337477-030	18-Oct-2023 00:00	1302_BIOAFA344_231018	✓
ES2337477-031	18-Oct-2023 00:00	1302_BIOAFA345_231018	✓
ES2337477-032	18-Oct-2023 00:00	1302_BIOAFA346_231018	✓
ES2337477-033	18-Oct-2023 00:00	1302_BIOAFA347_231018	✓
ES2337477-034	17-Oct-2023 00:00	1302_BIOAFA348_231017	✓
ES2337477-035	17-Oct-2023 00:00	1302_BIOAFA349_231017	✓
ES2337477-036	17-Oct-2023 00:00	1302_BIOAFA350_231017	✓
ES2337477-037	17-Oct-2023 00:00	1302_BIOAFA351_231017	✓
ES2337477-038	17-Oct-2023 00:00	1302_BIOAFA352_231017	✓
ES2337477-039	25-Oct-2023 00:00	1302_BIOAFA353_231025	✓
ES2337477-040	25-Oct-2023 00:00	1302_BIOAFA354_231025	✓
ES2337477-041	25-Oct-2023 00:00	1302_BIOAFA355_231025	✓

			BIOTA - EP231X PFAS - Full Suite (28 analytes) - includes PFOS
ES2337477-042	25-Oct-2023 00:00	1302_BIOAFA356_231025	✓
ES2337477-043	25-Oct-2023 00:00	1302_BIOAFA357_231025	✓
ES2337477-044	25-Oct-2023 00:00	1302_BIOAFA358_231025	✓
ES2337477-045	25-Oct-2023 00:00	1302_BIOAFA359_231025	✓
ES2337477-046	25-Oct-2023 00:00	1302_BIOAFA360_231025	✓
ES2337477-047	25-Oct-2023 00:00	1302_BIOAFA361_231025	✓
ES2337477-048	25-Oct-2023 00:00	1302_BIOAFA362_231025	✓
ES2337477-049	17-Oct-2023 00:00	1302_QC148_231017	✓
ES2337477-050	17-Oct-2023 00:00	1302_QC149_231017	✓
ES2337477-051	17-Oct-2023 00:00	1302_QC150_231017	✓
ES2337477-052	17-Oct-2023 00:00	1302_QC151_231017	✓
ES2337477-053	18-Oct-2023 00:00	1302_QC152_231018	✓
ES2337477-054	18-Oct-2023 00:00	1302_QC153_231018	✓
ES2337477-055	18-Oct-2023 00:00	1302_QC154_231018	✓
ES2337477-056	18-Oct-2023 00:00	1302_QC155_231018	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
ES2337477-057	19-Oct-2023 00:00	1302_QC304_231019	✓
ES2337477-058	27-Oct-2023 00:00	1302_QC504_231027	✓
ES2337477-059	19-Oct-2023 00:00	1302_QC505_231019	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	[redacted]
[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]		
- *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]		
- *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	
Tiane Mcquire		
- *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	

AECOM

1302 PAGE 1 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St,
Darwin, NT, 0820
M: 0466297464 [redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Environmental Division Sydney
Work Order Reference
ES2337477

Telephone : +61-2-8784 8555

Sampled By [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.17	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat 7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Preservation: Wipe	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: HOLD	Notes
1	1302_BIOAFA315_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
2	1302_BIOAFA316_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
3	1302_BIOAFA317_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
4	1302_BIOAFA318_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
5	1302_BIOAFA319_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
6	1302_BIOAFA320_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
7	1302_BIOAFA321_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
8	1302_BIOAFA322_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
9	1302_BIOAFA323_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
10	1302_BIOAFA324_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
11	1302_BIOAFA325_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
12	1302_BIOAFA326_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
13	1302_BIOAFA327_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold
14	1302_BIOAFA328_231017	17 Oct 2023	X					X	Snap bag	X	re-freeze when on hold

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & Invoice: AP_CustomerServiceANZ@aecom.com
Lab Report No. Cost ID

Relinquished by: [redacted] Signed: Date: 27/10/2023
Received by: Signed: Date:
Relinquished by: [redacted] Date:
Received by: Date: 31/10/23

COC emailed to ALS Darwin (excel & PDF)

AECOM

 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St
Darwin, NT, 0820
M: 046629464
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address [redacted]
Contact Nam [redacted]
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat	7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: HOLD	Notes
15	1302_BIOAFA329_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
16	1302_BIOAFA330_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
17	1302_BIOAFA331_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
18	1302_BIOAFA332_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
19	1302_BIOAFA333_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
20	1302_BIOAFA334_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
21	1302_BIOAFA335_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
22	1302_BIOAFA336_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
23	1302_BIOAFA337_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
24	1302_BIOAFA338_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
25	1302_BIOAFA339_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
26	1302_BIOAFA340_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
27	1302_BIOAFA341_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
28	1302_BIOAFA342_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice: AP_CustomerServiceANZ@aecom.com
Lab Signal No. Entry ID

Relinquished by: [redacted] Signed: Date: 27/10/2023
Received by: Signed: Date:
Relinquished by: Date:
Received by: [redacted] Date: 31/10/2023

AECOM

1302 PAGE 3 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St,
Darwin, NT, 0820
M: 0466297484
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name: [redacted]
Lab. Ref:

Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat	7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	water		Preservation: filtrd	acid	ice	frozen	Container (No. & type)	Analysis Request: HOLD	Notes
29	1302_BIOAFA343_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
30	1302_BIOAFA344_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
31	1302_BIOAFA345_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
32	1302_BIOAFA346_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
33	1302_BIOAFA347_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
34	1302_BIOAFA348_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
35	1302_BIOAFA349_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
36	1302_BIOAFA350_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
37	1302_BIOAFA351_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
38	1302_BIOAFA352_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
39	1302_BIOAFA353_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
40	1302_BIOAFA354_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
41	1302_BIOAFA355_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
42	1302_BIOAFA356_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & Invoice: AE_CustomerServiceANZ@aecom.com

Lab Reports: Esdat

Relinquished by: [redacted] Signed: Date: 27/10/2023

Received by: Signed: Date:

Relinquished by: Date:

Received by: [redacted] Date: 31/10/1111

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1302 PAGE 4 of 6 Chain of Custody

AECOM Australia Pty Ltd Level 3, 9 Cavenagh St, Darwin, NT, 0820 M: 0466297464 [redacted]	**Laboratory Details** Lab. Name: ALS Lab. Address [redacted] Contact Name [redacted] Lab. Ref: Tel: [redacted] Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name:** NT_1302_PFASOMP_23 **AECOM Project #:** 60612561/3.1 **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat 7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	water		Preservation: filtered	acid	ice	frozen	Container (No. & type)	Analysis Request: HOLD	Notes
43	1302_BIOAFA357_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
44	1302_BIOAFA358_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
45	1302_BIOAFA359_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
46	1302_BIOAFA360_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
47	1302_BIOAFA361_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
48	1302_BIOAFA362_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
49												
50												
51												
52												
53												
54												
55												
56												

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Report & Invoice: AP_CustomerServiceANZ@aecom.com

Lab Report No. (ESdat):

Relinquished by: [redacted]	Signed:	Date: 27/10/2023	Relinquished by: [redacted]		Date:
Received by:	Signed:	Date:	Received by:		Date: 31/10/2023

AECOM

1302 PAGE 5 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St
Darwin, NT, 0820
M: 0466297464
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name:
Lab. Ref:

Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted]

Project Name: NT_1302_PFASOMP_23

AECOM Project #: 60612561/3.1

Purchase Order No:

Specifications: Please report in ESdat format

RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat

7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtred	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Notes
57	1302_QC148_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
58	1302_QC149_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
59	1302_QC150_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
60	1302_QC151_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
61	1302_QC152_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
62	1302_QC153_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
63	1302_QC154_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
64	1302_QC155_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
65	1302_QC201_231017	17 Oct 2023	X						X	Snap bag	X	Frozen biota - PLS FWD TO NMI
66	1302_QC202_231017	17 Oct 2023	X						X	Snap bag	X	Frozen biota - PLS FWD TO NMI
67	1302_QC203_231018	18 Oct 2023	X						X	Snap bag	X	Frozen biota - PLS FWD TO NMI
68	1302_QC204_231018	18 Oct 2023	X						X	Snap bag	X	Frozen biota - PLS FWD TO NMI
69	1302_QC304_231019	19 Oct 2023		X				X		Bottle	X	
70	1302_QC504_231027	27 Oct 2023		X				X		Bottle	X	

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

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Report & Invoice: AP_CustomerServiceANZ@aecom.com

Lab Report no. / Bay ID

Relinquished by: [redacted] Signed: Date: 27/10/2023

Received by: Signed: Date:

Relinquished by: [redacted] Date:

Received by: [redacted] Date: 31/10/2023

AECOM

1302 PAGE 6 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 8 Cavenagh St,
Darwin, NT, 0829
M: 0466297464
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name: [redacted]
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat	7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Analysis Request	Notes
1	1302_QC505_231019	19 Oct 2023		X				X		Bottle	X		
											X		
											X		
											X		
											X		
											X		
											X		
											X		
											X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & Invoice: AP_CustomerServiceANZ@aecom.com
Lab Report No: Entry ID:

Relinquished by: [redacted] Signed: Date: 27/10/2023
Received by: Signed: Date:
Relinquished by: [redacted] Date:
Received by: [redacted] Date: 31/10/23

AECOM 1302 PAGE 1 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St,
Darwin, NT, 0820
M: 0466297464
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address [redacted]
Contact Name
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Environmental Division Sydney
Work Order Reference
ES2337477

Telephone : + 61-2-8784 8555

Sampled By [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat 7. Project Manager:	

Lab. ID	Sample ID	Sampling Date	Matrix: biota	water		Preservation: filtered	acid	ice	frozen	Container (No. & type)	Analysis Request: HOLD	Notes
1	1302_BIOAFA315_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
2	1302_BIOAFA316_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
3	1302_BIOAFA317_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
4	1302_BIOAFA318_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
5	1302_BIOAFA319_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
6	1302_BIOAFA320_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
7	1302_BIOAFA321_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
8	1302_BIOAFA322_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
9	1302_BIOAFA323_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
10	1302_BIOAFA324_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
11	1302_BIOAFA325_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
12	1302_BIOAFA326_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
13	1302_BIOAFA327_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
14	1302_BIOAFA328_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: AP_CustomerServiceANZ@aecom.com
Lab Report No. Entry #

Relinquished by: [redacted] Signed: Date: 27/10/2023
Received by: Signed: Date:
Relinquished by: [redacted] Date:
Received by: Date: 31/10/23

coc emailed to ALS Darwin (excel & PDF)

analysis instructions received 02/11/23 1549.

[redacted]

AECOM 1302 PAGE 2 of 6 Chain of Custody

AECOM Australia Pty Ltd Level 3, 9 Cavenagh St, Darwin, NT, 0820 M: 0466257464 [redacted]	**Laboratory Details** Lab. Name: ALS Lab. Address: [redacted] Contact Name Lab. Ref:	Tel: [redacted] Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format. RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.17	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat 7. Project Manager:	

Lab. ID	Sample ID	Sampling Date	Matrix: Solid	Matrix: Water		Preservation: filtred	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Analysis Request	Notes
15	1302_BIOAFA329_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
16	1302_BIOAFA330_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
17	1302_BIOAFA331_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
18	1302_BIOAFA332_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
19	1302_BIOAFA333_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
20	1302_BIOAFA334_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
21	1302_BIOAFA335_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
22	1302_BIOAFA336_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
23	1302_BIOAFA337_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
24	1302_BIOAFA338_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
25	1302_BIOAFA339_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
26	1302_BIOAFA340_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
27	1302_BIOAFA341_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
28	1302_BIOAFA342_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME** Temp. received: °C **Report & invoice:** AP_CustomerServiceANZ@aecom.com Lab Report No: Easy ID:

Relinquished by: [redacted]	Signed:	Date: 27/10/2023	Relinquished by: [redacted]		Date:
Received by:	Signed:	Date:	Received by:		Date: 31/10/23

AECOM

1302 PAGE 3 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St
Darwin, NT, 0820
M: 0466297464
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name: [redacted]
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat 7. Project Manager:

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Notes
29	1302_BIOAFA343_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
30	1302_BIOAFA344_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
31	1302_BIOAFA345_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
32	1302_BIOAFA346_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
33	1302_BIOAFA347_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
34	1302_BIOAFA348_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
35	1302_BIOAFA349_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
36	1302_BIOAFA350_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
37	1302_BIOAFA351_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
38	1302_BIOAFA352_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
39	1302_BIOAFA353_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
40	1302_BIOAFA354_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
41	1302_BIOAFA355_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
42	1302_BIOAFA356_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice: AP_CustomerServiceANZ@aecom.com
Lab Report No. Early ID

Relinquished by: [redacted] Signed: Date: 27/10/2023
Received by: Signed: Date:
Relinquished by [redacted] Date:
Received by: Date: 31/10/1111

AECOM

 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St,
Darwin, NT, 0820
M: 0466297464
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name: [redacted]
Lab. Ref:

Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat 7. Project Manager:	

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Analysis Request	Notes
43	1302_BIOAFA357_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
44	1302_BIOAFA358_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
45	1302_BIOAFA359_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
46	1302_BIOAFA360_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
47	1302_BIOAFA361_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
48	1302_BIOAFA362_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
49													
50													
51													
52													
53													
54													
55													
56													

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: AP_CustomerServiceANZ@aecom.com

Lab Report No. Bay ID

Relinquished by: [redacted] Signed: Date: 27/10/2023

Received by: Signed: Date:

Refinquished by: [redacted] Date:

Received by: [redacted] Date: 31/10/2023

AECOM 1302 PAGE 5 of 6 Chain of Custody

AECOM Australia Pty Ltd Level 3, 9 Cavenagh St, Darwin, NT, 0820 M: 0468297464 [redacted]	**Laboratory Details** Lab. Name: ALS Lab. Address: [redacted] Contact Name Lab. Ref:	Tel: [redacted] Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 8.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat 7. Project Manager:	

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: ATCH	Notes
57	1302_QC148_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
58	1302_QC149_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
59	1302_QC150_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
60	1302_QC151_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
61	1302_QC152_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
62	1302_QC153_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
63	1302_QC154_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
64	1302_QC155_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
65	1302_QC201_231017	17 Oct 2023	X						X	Snap bag	X	Frozen biota - PLS FWD TO NMI
66	1302_QC202_231017	17 Oct 2023	X						X	Snap bag	X	Frozen biota - PLS FWD TO NMI
67	1302_QC203_231018	18 Oct 2023	X						X	Snap bag	X	Frozen biota - PLS FWD TO NMI
68	1302_QC204_231018	18 Oct 2023	X						X	Snap bag	X	Frozen biota - PLS FWD TO NMI
69	1302_QC304_231019	19 Oct 2023		X				X		Bottle	X	
70	1302_QC504_231027	27 Oct 2023		X				X		Bottle	X	

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME** Temp. received: °C **Report & Invoice:** AP_CustomerServiceANZ@aecom.com Lab Report No: Esdat ID:

Relinquished by: [redacted]	Signed:	Date: 27/10/2023	Relinquished by: [redacted]	Date:	
Received by:	Signed:	Date:	Received by: [redacted]	Date: 31/10/2023	

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1302 PAGE 6 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St,
Darwin, NT, 0820
M: 0468297464
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name: [redacted]
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat 7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: HOLD	Notes
1	1302_QC505_231019	19 Oct 2023		X				X		Bottle	X	
											X	
											X	
											X	
											X	
											X	
											X	
											X	
											X	

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME** Temp. received: °C **Report & invoice:** AP_CustomerServiceANZ@aecom.com Lab Report No. Esdat ID

Relinquished by: [redacted] Signed: Date: 27/10/2023 Relinquished by: Date:

Received by: Signed: Date: Received by: [redacted] Date: 31/10/19

[redacted]

From: [redacted]
Sent: Thursday, 2 November 2023 3:49 PM
To: [redacted]
Subject: FW: [EXTERNAL] - Re: ES2337465 & ES2337477

[redacted]

Can you please arrange to have analysis added as per [redacted] email below?
I'll bring the COC's down shortly!
Thanks!

Kind regards,

[redacted]

From [redacted]
Sent: Wednesday, 1 November 2023 10:51 PM
To [redacted]
Subject: [EXTERNAL] - Re: ES2337465 & ES2337477

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.

[redacted]

Could we please schedule all samples for PFAS and forward any QC samples frozen to NMI for analysis?

Thanks,

[redacted]

[redacted]

I acknowledge the Traditional Custodians of the country throughout Australia and pay my respect to them, their Culture and their Elders past, present and emerging.

Please consider the environment before printing this email.

From: [redacted]
Sent: Wednesday, November 1, 2023 6:47:56 PM
To: [redacted]
Subject: ES2337465 & ES2337477

Hi All,

We have received two batches worth of biota samples that are currently on hold.

Could you please send through an updated COC at your earliest convenience? We will keep these samples on hold until we receive further notice.

Cheers.

Kind regards,

[redacted]

AECOM 1302 PAGE 1 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St.
Darwin, NT, 0820
M: 0486297464 [redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address [redacted]
Contact Nam [redacted]
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Environmental Division Sydney
Work Order Reference
ES2337477

Telephone : + 61-2-8784 8555

Sampled By [redacted] **Project Name:** NT_1302_PFASOMP_23 **AECOM Project #:** 60612561/3.1 **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	
6. Report Format: ESdat	7. Project Manager:

Subcon: Yes / No Split WO
Lab / Analysis: NM1 - QC20
Organised By / Date: QC20
Relinquished By / Date: QC20
Connote / Courier: QC20
WO Plan
Attached By: COC / Internal Sheet:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	water		Preservation: filtered	acid	ice	frozen	Container (No. & type)	Analysis Request	Notes
1	1302_BIOAFA315_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
2	1302_BIOAFA316_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
3	1302_BIOAFA317_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
4	1302_BIOAFA318_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
5	1302_BIOAFA319_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
6	1302_BIOAFA320_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
7	1302_BIOAFA321_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
8	1302_BIOAFA322_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
9	1302_BIOAFA323_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
10	1302_BIOAFA324_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
11	1302_BIOAFA325_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
12	1302_BIOAFA326_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
13	1302_BIOAFA327_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
14	1302_BIOAFA328_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: AP_CustomerServiceANZ@aecom.com
Lab Report No: Easy ID:

Relinquished by: [redacted] Signed: Date: 27/10/2023
Received by: Signed: Date:
Relinquished by: [redacted] Date:
Received by: [redacted] Date: 31/10/23

coc emailed to ALS Darwin (excel & PDF)

analysis instructions received 02/11/23 1549.

[redacted]

AECOM 1302 PAGE 2 of 6 Chain of Custody

AECOM Australia Pty Ltd Level 3, 9 Cavenagh St, Darwin, NT, 0820 M: 0466297464 [redacted]	**Laboratory Details** Lab. Name: ALS Lab. Address: [redacted] Contact Name [redacted] Lab. Ref: Tel: [redacted] Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19 v2

Sampled By [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat 7. Project Manager:	

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: HOLD	Notes
15	1302_BIOAFA329_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
16	1302_BIOAFA330_231017	17 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
17	1302_BIOAFA331_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
18	1302_BIOAFA332_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
19	1302_BIOAFA333_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
20	1302_BIOAFA334_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
21	1302_BIOAFA335_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
22	1302_BIOAFA336_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
23	1302_BIOAFA337_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
24	1302_BIOAFA338_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
25	1302_BIOAFA339_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
26	1302_BIOAFA340_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
27	1302_BIOAFA341_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
28	1302_BIOAFA342_231018	18 Oct 2023	X						X	Snap bag	X	re-freeze when on hold

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME** Temp. received: °C **Report & invoice:** AP_CustomerServiceANZ@aecom.com Lab Report No. Temp ID

Relinquished by: [redacted] Signed: Date: 27/10/2023 Relinquished by: [redacted] Date:

Received by: Signed: Date: Received by: Date: 31/10/2023

AECOM 1302 PAGE 3 of 6 Chain of Custody

AECOM Australia Pty Ltd
Level 3, 9 Cavenagh St,
Darwin, NT, 0820
M: 0466297464
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.17	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat 7. Project Manager:	

Lab. ID	Sample ID	Sampling Date	Matrix: tissue	Matrix: water	Matrix:	Preservation: filtred	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Analysis Request	Notes
29	1302_BIOAFA343_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
30	1302_BIOAFA344_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
31	1302_BIOAFA345_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
32	1302_BIOAFA346_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
33	1302_BIOAFA347_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
34	1302_BIOAFA348_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
35	1302_BIOAFA349_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
36	1302_BIOAFA350_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
37	1302_BIOAFA351_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
38	1302_BIOAFA352_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
39	1302_BIOAFA353_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
40	1302_BIOAFA354_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
41	1302_BIOAFA355_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
42	1302_BIOAFA356_231025	25 Oct 2023	X						X	Snap bag	X		re-freeze when on hold

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice: AP_CustomerServiceANZ@aecom.com
ID Report No. Eday ID

Relinquished by: [redacted] Signed: Date: 27/10/2023
Received by: Signed: Date:

Relinquished by: [redacted] Date:
Received by: [redacted] Date: 31/10/1111

AECOM

1302 PAGE 4 of 6 Chain of Custody

AECOM Australia Pty Ltd Level 3, 9 Cavenagh St, Darwin, NT, 0820 M: 0468297464 [redacted]	**Laboratory Details** Lab. Name: ALS Lab. Address: [redacted] Contact Name Lab. Ref.	Tel: [redacted] Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat 7. Project Manager:	

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: HOLD	Notes
43	1302_BIOAFA357_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
44	1302_BIOAFA358_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
45	1302_BIOAFA359_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
46	1302_BIOAFA360_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
47	1302_BIOAFA361_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
48	1302_BIOAFA362_231025	25 Oct 2023	X						X	Snap bag	X	re-freeze when on hold
~~49~~												
~~50~~												
~~51~~												
~~52~~												
~~53~~												
~~54~~												
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~~56~~												

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME Temp. received: °C Report & invoice: AP_CustomerServiceANZ@aecom.com Lab Report No: Bdg ID:

Relinquished by: [redacted]	Signed:	Date: 27/10/2023	Relinquished by:	Date:	
Received by:	Signed:	Date:	Received by: [redacted]	Date: 31/10/2023	

AECOM 1302 PAGE 5 of 6 Chain of Custody

AECOM Australia Pty Ltd Level 3, 9 Cavenagh St, Darwin, NT, 0820 M: 0466297464 [redacted]	**Laboratory Details** Lab. Name: ALS Lab. Address: [redacted] Contact Name: [redacted] Lab. Ref:
	Tel: [redacted] Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format. RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat 7. Project Manager:	

	Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Analysis Request	Notes
49	~~57~~	1302_QC148_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
50	~~58~~	1302_QC149_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
51	~~59~~	1302_QC150_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
52	~~60~~	1302_QC151_231017	17 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
53	~~61~~	1302_QC152_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
54	~~62~~	1302_QC153_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
55	~~63~~	1302_QC154_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
56	~~64~~	1302_QC155_231018	18 Oct 2023	X						X	Snap bag	X		re-freeze when on hold
X	~~65~~	1302_QC201_231017	17 Oct 2023	X						X	Snap bag	X		Frozen biota - PLS FWD TO NMI
Y	~~66~~	1302_QC202_231017	17 Oct 2023	X						X	Snap bag	X		Frozen biota - PLS FWD TO NMI
Y	~~67~~	1302_QC203_231018	18 Oct 2023	X						X	Snap bag	X		Frozen biota - PLS FWD TO NMI
Y	~~68~~	1302_QC204_231018	18 Oct 2023	X						X	Snap bag	X		Frozen biota - PLS FWD TO NMI
57	~~69~~	1302_QC304_231019	19 Oct 2023		X				X		Bottle	X		
58	~~70~~	1302_QC504_231027	27 Oct 2023		X				X		Bottle	X		

Comments:	Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME	Temp. received: °C	Report & invoice: AP_CustomerServiceANZ@aecom.com
Relinquished by: [redacted]	Signed:	Date: 27/10/2023	Relinquished by: [redacted] Date:
Received by:	Signed:	Date:	Received by: Date: 27/10/2023

AECOM

1302 PAGE 6 of 6 Chain of Custody

AECOM Australia Pty Ltd Level 3, 9 Cavenagh St Darwin, NT, 0820 M: 0466297464 [redacted]	**Laboratory Details** Lab. Name: ALS Lab. Address: [redacted] Contact Name: [redacted] Lab. Ref:
	Tel: [redacted] Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat 7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: VOC_D	Notes
59 71	1302_QC505_231019	19 Oct 2023		X				X		Bottle	X	
											X	
											X	
											X	
											X	
											X	
											X	
											X	
											X	

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME** Temp. received: °C **Report & invoice:** AP_CustomerServiceANZ@aecom.com Lab Report No. Entry #

Relinquished by: [redacted]	Signed:	Date: 27/10/2023	Relinquished by: [redacted]	Date:	
Received by:	Signed:	Date:	Received by:	Date: 31/10/23	

[redacted]

From: [redacted]
Sent: Thursday, 2 November 2023 3:49 PM
To: [redacted]
Subject: FW: [EXTERNAL] - Re: ES2337465 & ES2337477

[redacted]

Can you please arrange to have analysis added as per [redacted] email below?
I'll bring the COC's down shortly!
Thanks!

Kind regards,

[redacted]

From [redacted]
Sent: Wednesday, 1 November 2023 10:51 PM
To: [redacted]
Subject: [EXTERNAL] - Re: ES2337465 & ES2337477

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.

[redacted]

Could we please schedule all samples for PFAS and forward any QC samples frozen to NMI for analysis?

Thanks,

[redacted]

[redacted]

I acknowledge the Traditional Custodians of the country throughout Australia and pay my respect to them, their Culture and their Elders past, present and emerging.

Please consider the environment before printing this email.

From [redacted]
Sent: Wednesday, November 1, 2023 6:47:56 PM
To: [redacted]
Subject: ES2337465 & ES2337477

Hi All,

We have received two batches worth of biota samples that are currently on hold.

Could you please send through an updated COC at your earliest convenience? We will keep these samples on hold until we receive further notice.

Cheers.

Kind regards,

[redacted]

QUALITY CONTROL REPORT

Work Order	: **ES2337477**	Page	: 1 of 16
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 31-Oct-2023
Order number	: 60612561/3.1	Date Analysis Commenced	: 07-Nov-2023
C-O-C number	: ----	Issue Date	: 01-Dec-2023
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 59		
No. of samples analysed	: 59		

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]	LCMS Coordinator	Sydney Organics, Smithfield, NSW

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
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

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: **BIOTA**

				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: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	3	3	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5440084)									
ES2337477-020	1302_BIOAFA334_231018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	3	3	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	17	20	14.8	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
ES2337477-030	1302_BIOAFA344_231018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440084) - continued									
ES2337477-030	1302_BIOAFA344_231018	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	2	2	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	13	12	0.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	1	1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	20	19	6.5	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	58	50	13.0	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
ES2337477-049	1302_QC148_231017	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	2	3	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440070) - continued									
ES2337477-011	1302_BIOAFA325_231017	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5440084)									
ES2337477-020	1302_BIOAFA334_231018	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
ES2337477-030	1302_BIOAFA344_231018	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440090) - continued									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
ES2337477-049	1302_QC148_231017	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5440084)									

Sub-Matrix: **BIOTA**

				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: 5440084) - continued									
ES2337477-020	1302_BIOAFA334_231018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-030	1302_BIOAFA344_231018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-049	1302_QC148_231017	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440090) - continued									
ES2337477-049	1302_QC148_231017	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5440084)									
ES2337477-020	1302_BIOAFA334_231018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-030	1302_BIOAFA344_231018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440084) - continued									
ES2337477-030	1302_BIOAFA344_231018	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-049	1302_QC148_231017	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: Sum of PFAS	----	1	µg/kg	3	3	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: Sum of PFAS	----	1	µg/kg	<1	<1	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5440084)									
ES2337477-020	1302_BIOAFA334_231018	EP231X: Sum of PFAS	----	1	µg/kg	20	23	14.0	0% - 20%
ES2337477-030	1302_BIOAFA344_231018	EP231X: Sum of PFAS	----	1	µg/kg	15	14	6.9	0% - 50%
EP231P: PFAS Sums (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Sum of PFAS	----	1	µg/kg	80	70	13.3	0% - 20%
ES2337477-049	1302_QC148_231017	EP231X: Sum of PFAS	----	1	µg/kg	2	3	40.0	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: **BIOTA**

				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: 5440070)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	5 µg/kg	96.0	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	5 µg/kg	101	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	5 µg/kg	92.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	5 µg/kg	79.8	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	5 µg/kg	94.6	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1	µg/kg	<1	5 µg/kg	93.6	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5440084)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	5 µg/kg	76.0	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	5 µg/kg	74.0	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	5 µg/kg	87.7	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	5 µg/kg	97.9	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	5 µg/kg	98.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1	µg/kg	<1	5 µg/kg	105	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5440090)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	5 µg/kg	75.4	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	5 µg/kg	74.1	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	5 µg/kg	86.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	5 µg/kg	98.1	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	5 µg/kg	84.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1	µg/kg	<1	5 µg/kg	87.0	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440070)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	25 µg/kg	111	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1	µg/kg	<1	5 µg/kg	98.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	5 µg/kg	112	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	5 µg/kg	80.9	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	5 µg/kg	100	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	5 µg/kg	118	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	5 µg/kg	119	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	5 µg/kg	86.1	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1	µg/kg	<1	5 µg/kg	102	69.0	135

Sub-Matrix: **BIOTA**

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: 5440070) - continued								
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1	µg/kg	<1	5 µg/kg	122	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	12.5 µg/kg	98.5	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440084)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	25 µg/kg	84.5	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1	µg/kg	<1	5 µg/kg	93.5	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	5 µg/kg	87.7	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	5 µg/kg	83.1	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	5 µg/kg	95.2	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	5 µg/kg	93.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	5 µg/kg	95.4	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	5 µg/kg	88.5	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1	µg/kg	<1	5 µg/kg	95.9	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1	µg/kg	<1	5 µg/kg	99.7	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	12.5 µg/kg	95.8	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440090)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	25 µg/kg	87.7	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1	µg/kg	<1	5 µg/kg	84.2	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	5 µg/kg	91.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	5 µg/kg	84.7	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	5 µg/kg	98.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	5 µg/kg	81.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	5 µg/kg	79.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	5 µg/kg	79.6	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1	µg/kg	<1	5 µg/kg	76.5	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1	µg/kg	<1	5 µg/kg	84.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	12.5 µg/kg	89.3	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440070)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1	µg/kg	<1	5 µg/kg	80.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2	µg/kg	<2	12.5 µg/kg	93.6	88.1	105
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	12.5 µg/kg	83.2	81.6	144
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	12.5 µg/kg	108	84.7	135
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	12.5 µg/kg	115	20.5	150

Sub-Matrix: **BIOTA**

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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440070) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	5 µg/kg	88.5	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	5 µg/kg	91.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440084)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1	µg/kg	<1	5 µg/kg	97.3	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2	µg/kg	<2	12.5 µg/kg	95.8	88.1	105
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	12.5 µg/kg	97.4	81.6	144
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	12.5 µg/kg	92.6	84.7	135
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	12.5 µg/kg	91.4	20.5	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	5 µg/kg	98.5	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	5 µg/kg	94.7	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440090)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1	µg/kg	<1	5 µg/kg	94.9	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2	µg/kg	<2	12.5 µg/kg	100	88.1	105
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	12.5 µg/kg	88.2	81.6	144
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	12.5 µg/kg	108	84.7	135
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	12.5 µg/kg	84.8	20.5	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	5 µg/kg	77.1	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	5 µg/kg	75.5	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440070)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	5 µg/kg	84.4	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	5 µg/kg	81.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	5 µg/kg	133	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	5 µg/kg	108	93.4	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440084)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	5 µg/kg	104	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	5 µg/kg	95.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	5 µg/kg	103	65.0	137

Sub-Matrix: **BIOTA**

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: 5440084) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	5 µg/kg	110	93.4	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440090)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	5 µg/kg	90.3	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	5 µg/kg	82.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	5 µg/kg	91.4	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	5 µg/kg	111	93.4	130
EP231P: PFAS Sums (QCLot: 5440070)								
EP231X: Sum of PFAS	----	1	µg/kg	<1	----	----	----	----
EP231P: PFAS Sums (QCLot: 5440084)								
EP231X: Sum of PFAS	----	1	µg/kg	<1	----	----	----	----
EP231P: PFAS Sums (QCLot: 5440090)								
EP231X: Sum of PFAS	----	1	µg/kg	<1	----	----	----	----

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
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5455386)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	83.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	83.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	92.4	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	89.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	80.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5455386)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	81.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.3	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	97.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	88.5	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	92.7	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.1	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	87.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.3	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	90.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	83.9	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	97.5	71.0	132

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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5455386)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.1	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.9	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	91.3	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.2	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	88.7	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	90.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5455386)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	86.0	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	86.6	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	90.4	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	103	71.4	144

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: **BIOTA**

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: 5440070)							
ES2337477-002	1302_BIOAFA316_231017	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	5 µg/kg	114	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	5 µg/kg	87.0	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	5 µg/kg	97.0	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	5 µg/kg	93.8	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	5 µg/kg	113	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	5 µg/kg	78.5	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5440084)							
ES2337477-021	1302_BIOAFA335_231018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	5 µg/kg	81.5	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	5 µg/kg	84.2	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	5 µg/kg	88.1	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	5 µg/kg	100	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	5 µg/kg	# Not Determined	68.0	136

Sub-Matrix: **BIOTA**

				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: 5440084) - continued							
ES2337477-021	1302_BIOAFA335_231018	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	5 µg/kg	89.0	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5440090)							
ES2337477-040	1302_BIOAFA354_231025	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	5 µg/kg	82.0	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	5 µg/kg	73.3	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	5 µg/kg	106	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	5 µg/kg	107	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	5 µg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	5 µg/kg	102	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440070)							
ES2337477-002	1302_BIOAFA316_231017	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	25 µg/kg	108	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	5 µg/kg	88.6	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	5 µg/kg	105	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	5 µg/kg	80.3	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	5 µg/kg	99.6	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	5 µg/kg	110	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	5 µg/kg	117	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	5 µg/kg	82.0	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	5 µg/kg	101	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	5 µg/kg	114	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	12.5 µg/kg	98.6	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440084)							
ES2337477-021	1302_BIOAFA335_231018	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	25 µg/kg	85.6	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	5 µg/kg	102	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	5 µg/kg	94.0	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	5 µg/kg	85.8	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	5 µg/kg	102	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	5 µg/kg	102	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	5 µg/kg	96.2	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	5 µg/kg	101	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	5 µg/kg	102	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	5 µg/kg	102	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	12.5 µg/kg	99.6	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440090)							
ES2337477-040	1302_BIOAFA354_231025	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	25 µg/kg	80.9	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	5 µg/kg	81.6	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	5 µg/kg	91.0	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	5 µg/kg	85.6	71.0	131

Sub-Matrix: **BIOTA**

				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: 5440090) - continued							
ES2337477-040	1302_BIOAFA354_231025	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	5 µg/kg	93.8	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	5 µg/kg	78.4	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	5 µg/kg	85.9	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	5 µg/kg	83.5	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	5 µg/kg	90.3	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	5 µg/kg	78.8	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	12.5 µg/kg	94.3	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440070)							
ES2337477-002	1302_BIOAFA316_231017	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	5 µg/kg	86.2	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	12.5 µg/kg	100	88.1	105
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	12.5 µg/kg	# 75.6	81.6	144
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	12.5 µg/kg	97.8	84.7	135
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	12.5 µg/kg	107	20.5	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	5 µg/kg	114	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	5 µg/kg	86.3	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440084)							
ES2337477-021	1302_BIOAFA335_231018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	5 µg/kg	93.2	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	12.5 µg/kg	104	88.1	105
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	12.5 µg/kg	91.6	81.6	144
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	12.5 µg/kg	107	84.7	135
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	12.5 µg/kg	102	20.5	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	5 µg/kg	102	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	5 µg/kg	99.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440090)							
ES2337477-040	1302_BIOAFA354_231025	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	5 µg/kg	92.2	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	12.5 µg/kg	90.4	88.1	105
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	12.5 µg/kg	89.4	81.6	144

Sub-Matrix: **BIOTA**

				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: 5440090) - continued							
ES2337477-040	1302_BIOAFA354_231025	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	12.5 µg/kg	90.9	84.7	135
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	12.5 µg/kg	83.0	20.5	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	5 µg/kg	83.5	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	5 µg/kg	80.6	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440070)							
ES2337477-002	1302_BIOAFA316_231017	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	5 µg/kg	76.1	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	5 µg/kg	88.7	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	5 µg/kg	95.1	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	5 µg/kg	116	93.4	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440084)							
ES2337477-021	1302_BIOAFA335_231018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	5 µg/kg	105	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	5 µg/kg	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	5 µg/kg	114	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	5 µg/kg	97.2	93.4	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440090)							
ES2337477-040	1302_BIOAFA354_231025	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	5 µg/kg	88.4	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	5 µg/kg	91.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	5 µg/kg	91.1	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	5 µg/kg	122	93.4	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2337477**	Page	: 1 of 12
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: +[redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 31-Oct-2023
Site	: ----	Issue Date	: 01-Dec-2023
Sampler	: [redacted]	No. of samples received	: 59
Order number	: 60612561/3.1	No. of samples analysed	: 59

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: **BIOTA**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	ES2337477--021	1302_BIOAFA335_231018	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ES2337477--040	1302_BIOAFA354_231025	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231C: Perfluoroalkyl Sulfonamides	ES2337477--002	1302_BIOAFA316_231017	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	4151-50-2	75.6 %	81.6-144%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	8	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: **BIOTA**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method	***Sample Date***	*Extraction / Preparation*			*Analysis*		
Container / *Client Sample ID(s)*		***Date extracted***	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*

Matrix: **BIOTA**

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
Biota Sample Pre-Preparation							
Snap Lock Bag (Biota-PP)							
1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017, 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017, 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	17-Oct-2023	14-Nov-2023	----	----	----	----	----
Snap Lock Bag (Biota-PP)							
1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018, 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018, 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	18-Oct-2023	14-Nov-2023	----	----	----	----	----
Snap Lock Bag (Biota-PP)							
1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	25-Oct-2023	14-Nov-2023	----	----	----	----	----

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231-PFOS-SP)							
1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**28-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X)							
1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP)							
1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**28-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP)							
1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017, 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X)							
1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP)							
1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**28-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X)							

Matrix: **BIOTA**

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								
1302_BIOAFA334_231018, 1302_BIOAFA336_231018, 1302_BIOAFA338_231018, 1302_BIOAFA340_231018, 1302_BIOAFA342_231018, 1302_BIOAFA344_231018, 1302_BIOAFA346_231018,	1302_BIOAFA335_231018, 1302_BIOAFA337_231018, 1302_BIOAFA339_231018, 1302_BIOAFA341_231018, 1302_BIOAFA343_231018, 1302_BIOAFA345_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA331_231018, 1302_BIOAFA333_231018	1302_BIOAFA332_231018,	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**28-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA331_231018, 1302_BIOAFA333_231018, 1302_QC153_231018, 1302_QC155_231018	1302_BIOAFA332_231018, 1302_QC152_231018, 1302_QC154_231018,	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC154_231018,	1302_QC153_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA353_231025, 1302_BIOAFA355_231025, 1302_BIOAFA357_231025, 1302_BIOAFA359_231025, 1302_BIOAFA361_231025,	1302_BIOAFA354_231025, 1302_BIOAFA356_231025, 1302_BIOAFA358_231025, 1302_BIOAFA360_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA355_231025, 1302_BIOAFA357_231025, 1302_BIOAFA359_231025, 1302_BIOAFA361_231025,	1302_BIOAFA354_231025, 1302_BIOAFA356_231025, 1302_BIOAFA358_231025, 1302_BIOAFA360_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

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

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) 1302_QC304_231019,	1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027		**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X) 1302_QC304_231019,	1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027		**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X) 1302_QC304_231019,	1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027		**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X) 1302_QC304_231019,	1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027		**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X) 1302_QC304_231019,	1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027		**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓

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: **BIOTA**

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	6	56	**10.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	**5.36**	**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	8	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	8	**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
PFOS - Linear/Branched Speciation	EP231-PFOS-SP	BIOTA	In-house: Linear PFOS is determined by quantiation of the separate linear peak using linear PFOS. Branched PFOS is determined as the difference between total PFOS (determined using a mixed linear/branched standard) and linear PFOS.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	BIOTA	In-house: A sample extract is analysed 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 biota which is then solvent extracted. 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
Prep-Preparation for Biota Analysis	* Biota-PP	BIOTA	A sample is prepared from whole or particular tissues/organs, identified, homogenised and the total weight of prepared sample recorded.
Sample Preparation for PFAS in Biota	EP231-PR	BIOTA	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of homogenised biota 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 conform to US DoD QSM 5.3, table B-15 requirements.
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.

Appendix E

Data Validation Reports

DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561 - PFASOMP	**Date:**	14/11/2023
Site:	1302 – RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney & NMI	**Date:**	14/11/2023
Lab reference:	ES2337724, ES2338712, RN1410783 and RN1411490		

Key Findings:

The groundwater analytical data can be used as a basis for interpretation, subject to the limitations outlined below:

- Elevated RPDs should be taken into consideration when interpreting concentrations for PFOS close to guidelines.
- The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR for primary samples 1302_MW209_231031 and 1302_MW451_231031. This should be taken into consideration when interpreting data and using data quantitatively.

Component		Outliers			Material impact on interpretation
		No	Yes	Comment	
Frequency of field quality assurance/quality control (QAQC)		✓			No
Number of tests requested/reported		✓			No
Sample handling/preservation/holding times			✓	1	No
Frequency of laboratory QA/QC			✓	2	No
Limits of reporting (LOR)			✓	3	No
Blank analysis	Field blank	✓			No
	Rinsate blank	✓			No
	Trip blank	✓			No
	Method blank	✓			No
Field intra-laboratory relative percent differences (RPDs)					No
Field inter-laboratory RPDs			✓	4	No
Laboratory duplicate RPDs		✓			No
Matrix spike (MS) % recoveries			✓	5	No
Laboratory control spike (LCS) % recoveries		✓			No
Surrogate % recoveries		✓			No
Other observations		✓		NA	

Comments	
1. Sample handling/preservation/holding times	Sample receipt temperature (26.8 °C) was outside of the recommended range (≤6 °C) in primary batch ES2337724. The inter-laboratory sample was received at the secondary laboratory at a lower temperature (11.8 °C). Potential under reporting must be taken into consideration. However, due to the nature of PFAS not being volatile, that all samples were received below ambient groundwater temperature at the time of sampling (~30 °C), the samples were immediately cooled upon collection, and lastly that the primary and inter-laboratory RPDs were collected at the required frequency and generally within control limits, the potential for under reporting is not considered to materially affect the interpretation of results. Sample receipt temperature (31.2 °C) was outside of the recommended range (≤6 °C) in primary batch ES2338712. The inter-laboratory sample was received at the secondary laboratory at a chilled temperature. Potential under reporting must be taken into consideration. However, due to the nature of PFAS not being volatile, that all samples were received slightly above ambient groundwater temperature at the time of sampling (~30 °C), the samples were immediately cooled upon collection, and lastly that the primary and inter-laboratory RPDs were collected at the required frequency and generally within control limits, the potential for under reporting is not considered to materially affect the interpretation of results.
2. Frequency of laboratory QA/QC	Laboratory duplicate samples were not reported for Per- and Polyfluoroalkyl Substances (PFAS) in the primary lab batches ES2338712 and ES2337724. The precision of the data can be assessed as acceptable based on intra- and inter-laboratory duplicate RPDs which were reported at the required frequencies and generally within control limits. Matrix spikes were not reported at the required frequencies for Per- and Polyfluoroalkyl Substances (PFAS) in the primary batch ES2337724. The accuracy of the data can be assessed as acceptable based on method blanks, LCS and surrogate spike recoveries (which were reported at the required frequencies and within control limits), and available matrix spike recoveries for the same analytical method group (which were reported within control limits).
3. Limits of reporting	Limits of reporting were sufficiently low to enable assessment against adopted guideline criteria (NEMP 2020 guidelines), with the exception of PFOS against the freshwater species protection guideline value (99%). The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR for primary samples 1302_MW209_231031 and 1302_MW451_231031. This should be taken into consideration when interpreting data and using data quantitatively.

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4.	Field inter-laboratory RPDs	Field intra-laboratory duplicate RPDs were reported within control limits, with the exception of the following (high concentrations in **bold**): • **1302_MW144_231030** & 1302_QC200_231030 for Perfluorooctane sulfonic acid (PFOS) (58%) • **1302_MW185_231031** & 1302_QC202_231031 for Perfluorooctane sulfonic acid (PFOS) (77%) This apparent lack of precision should be taken into consideration when interpreting concentrations for PFOS close to guidelines as primary results of PFOS may be biased low by up to 77%.
5.	Matrix Spikes	Matrix spike recoveries (where reported) were within control limits for ES2338714, except for PFHxS and PFOS as background levels were greater than or equal to 4x spike levels. These non-determinations do not reflect method bias and do not affect data interpretation. The accuracy of the data can be assessed as acceptable based on method blanks, LCS and surrogate spike recoveries (which were reported at the required frequencies and within control limits), and available matrix spike recoveries for the same analytical method group (which were reported within control limits).

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QA/QC Blanks

Lab Report	ES2337724	ES2337724	ES2338712	ES2337724	ES2337724	ES2338712	ES2337724	ES2337724	ES2338712	
Field ID	1302_QC300_231030	1302_QC301_231031	1302_QC300_231109	1302_QC400_231030	1302_QC401_231031	1302_QC400_231109	1302_QC500_231030	1302_QC501_231031	1302_QC500_231109	
Date	30/10/2023	31/10/2023	9/11/2023	30/10/2023	31/10/2023	9/11/2023	30/10/2023	31/10/2023	9/11/2023	
Sample Type	Rinsate	Rinsate	Rinsate	Field Blank	Field Blank	Field Blank	Trip Blank	Trip Blank	Trip Blank	
Analyte	**Units**	**LOR**								
PFAS Full Suite										
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
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 sulfonic acid (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
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 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
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 sulfonamide (MeFOSA)	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 (MFOSAA)	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 sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
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

Data Validation Report
Field RPDs
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Relative Percentage Difference

	Lab Report Number	ES2337724	ES2337724		ES2337724	ES2337724		ES2337724	ES2337724		ES2338712	ES2338712	
	Field ID	1302_MW144_231030	1302_QC100_231030	RPD	1302_MW176_231031	1302_QC101_231031	RPD	1302_MW185_231031	1302_QC102_231031	RPD	1302_MW128_231109	1302_QC100_231109	RPD
	Sample Type	Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate	
	Sample Date	30/10/2023	30/10/2023		31/10/2023	31/10/2023		31/10/2023	31/10/2023		9/11/2023	9/11/2023	
Analyte	**Units**	**LOR**											
PFAS Full Suite													
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
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 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	0.8	0.77	4
8:2 Fluorotelomer sulfonic acid (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
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	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
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 sulfonamide (MeFOSA)	µg/L	0.05 : 0.02 (Interlab)	<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 (MFOSAA)	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
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.18	0.16	12	<0.02	<0.02	0	0.04	0.04	0	0.11	0.12	9
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
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
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
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
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	0.11	0.08	32	<0.02	<0.02	0	<0.02	<0.02	0	0.08	0.08	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.02	40	<0.02	<0.02	0	<0.02	<0.02	0	0.06	0.06	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.24	0.22	9	<0.02	<0.02	0	0.03	0.02	40	0.41	0.43	5
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
Perfluorooctane sulfonamide (FOSA)	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
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	0.19	0.17	11	<0.02	<0.02	0	0.04	0.03	29	0.12	0.12	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	0.04	0.04	0	<0.02	<0.02	0	<0.02	<0.02	0	0.24	0.24	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<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
Sum of PFAS	µg/L	0.01	5.45	4.61	17	0.1	0.1	0	0.49	0.43	13	6.48	6.64	2
Sum of PFHxS and PFOS	µg/L	0.01	4.6	3.86	17	0.1	0.1	0	0.37	0.33	11	4.56	4.71	3
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01 : 0.02 (Interlab)	3.08	2.52	20	0.07	0.07	0	0.13	0.11	17	3.26	3.36	3
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	0.06	0.06	0	<0.01	<0.01	0	0.01	0.01	0	0.1	0.11	10
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	1.52	1.34	13	0.03	0.03	0	0.24	0.22	9	1.3	1.35	4

**High RPDs are in bold (Acceptable RPDs for each LOR multiplier range are: 200 (1-10 x LOR); 50 (10-20 x LOR); 30 (> 20 x LOR))

***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

Data Validation Report
Field RPDs
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Relative Percentage Difference

	Lab Report Number	ES2337724	RN1410783		ES2337724	RN1410783		ES2337724	RN1410783		ES2338712	RN1411490	
	Field ID	1302_MW144_231030	1302_QC200_231030	RPD	1302_MW176_231031	1302_QC201_231031	RPD	1302_MW185_231031	1302_QC202_231031	RPD	1302_MW128_231109	1302_QC200_231109	RPD
	Sample Type	Primary	Inter-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Inter-lab Duplicate	
	Sample Date	30/10/2023	30/10/2023		31/10/2023	31/10/2023		31/10/2023	31/10/2023		9/11/2023	9/11/2023	
Analyte	**Units**	**LOR**											
PFAS Full Suite													
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
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 : 0.01 (Interlab)	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0	0.8	0.65	21
8:2 Fluorotelomer sulfonic acid (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
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	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
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 sulfonamide (MeFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	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
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.18	0.17	6	<0.02	<0.01	0	0.04	0.038	5	0.11	0.11	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	0.092	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
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
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
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	0.11	0.052	72	<0.02	<0.01	0	<0.02	<0.01	0	0.08	0.05	46
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.025	18	<0.02	<0.01	0	<0.02	<0.01	0	0.06	0.052	14
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.24	0.24	0	<0.02	<0.01	0	0.03	0.021	35	0.41	0.37	10
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
Perfluorooctane sulfonamide (FOSA)	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
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	0.19	0.15	24	<0.02	<0.01	0	0.04	0.027	39	0.12	0.098	20
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	0.04	0.045	12	<0.02	<0.02	0	<0.02	<0.02	0	0.24	0.21	13
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<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	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Sum of PFAS	µg/L	0.01	5.45	3.152	53	0.1	0.055	58	0.49	0.308	45	6.48	5.183	22
Sum of PFHxS and PFOS	µg/L	0.01	4.6	3.152	37	0.1	0.055	58	0.37	0.308	18	4.56	5.183	13
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01 : 0.02 (Interlab)	**3.08**	**1.7**	**58**	0.07	<0.02	111	**0.13**	**0.058**	**77**	3.26	3.9	18
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	0.06	0.052	14	<0.01	<0.01	0	0.01	<0.01	0	0.1	0.083	19
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	1.52	1.4	8	0.03	0.025	18	0.24	0.24	0	1.3	1.2	8

**High RPDs are in bold (Acceptable RPDs for each LOR multiplier range are: 200 (1-10 x LOR); 50 (10-20 x LOR); 30 (> 20 x LOR))

***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

AECOM

DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	12/09/2023
Site:	1302 – RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney; NMI Sydney	**Date:**	12/09/2023
Lab reference:	August 2023: ES2329252, RN1404541		

Key Findings:

The analytical data can be used as a basis for interpretation, subject to the limitations outlined below:

- Elevated RPDs should be taken into consideration when using data for PFOS quantitatively.

Component		Outliers			Material impact on interpretation
		No	Yes	Comment	
Frequency of field quality assurance/quality control		✓			No
Number of tests requested/reported		✓			No
Sample handling/preservation/holding times			✓	1	No
Frequency of laboratory QA/QC		✓			No
Limits of reporting (LOR)		✓			No
Blank analysis	Field blank	✓			No
	Rinsate blank	✓			No
	Trip blank	✓			No
	Method blank	✓			No
Field intra-laboratory relative percent differences (RPDs)		✓			No
Field inter-laboratory RPDs			✓	2	No
Laboratory duplicate RPDs		✓			No
Matrix spike (MS) % recoveries		✓			No
Laboratory control spike (LCS) % recoveries		✓			No
Surrogate % recoveries		✓			No
Other comments		✓			No

Comments

1. Sample handling/ preservation/ holding times

Laboratory batches were received outside of the recommended temperature range (≤6°C):

Batch Number	Temperature (°C)
ES2326252	26.0 °C
RN1404541	Chilled

Potential under reporting must be taken into consideration. However, the potential for under reporting is not considered to materially affect the interpretation of results due to the nature of PFAS not degrading via volatilisation, the samples were received at ambient surface water temperature at the time of sampling (25.8 °C) and the samples were immediately cooled upon collection.

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DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	12/09/2023
Site:	1302 – RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney; NMI Sydney	**Date:**	12/09/2023
Lab reference:	August 2023: ES2329252, RN1404541		

2. Field inter-laboratory RPDs	Field inter-laboratory RPDs were reported within control limits, except for PFOS (as shown in the RPD table), greater concentrations are shown in bold: • **1302_SW109_230830** & 1302_QC200_230830 for PFOS (70%) As all concentrations of PFOS were reported well above the adopted guidelines (0.00023 µg/L), the elevated RPD is not considered to affect the interpretation of results against guidelines. However, the elevated RPD should be taken into consideration when using the data quantitatively.

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Data Validation Report
QAQC Blanks
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

QAQC Blanks

Lab Report Number	**ES2329252**	**ES2329252**	**ES2329252**
Field ID	1302_QC400_230830	1302_QC300_230830	1302_QC500_230830
Sampled_Date	30/08/2023	30/08/2023	30/08/2023
Sample Type	Field Blank	Rinsate	Trip Blank

Analyte	**Units**	**LOR**			
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	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
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01

Data Validation Report
Field RPDs
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Tindal

Relative Percentage Difference

Lab Report Number	**ES2329252**	**ES2329252**		**ES2329252**	**RN1404541**	
Field ID	1302_SW109_230830	1302_QC100_230830	**RPD**	1302_SW109_230830	1302_QC200_230830	**RPD**
Sampled Date/Time	30/08/2023	30/08/2023		30/08/2023	30/08/2023	
Sample Type	Primary	Intra-lab Duplicate		Primary	Inter-lab Duplicate	

Analyte	**Units**	**LOR**						
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.08	0.07	13	0.08	0.055	37
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	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
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	0.04	0.04	0	0.04	0.021	62
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	0.011	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.14	0.12	15	0.14	0.082	52
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	0.09	0.08	12	0.09	0.065	32
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	0.03	0.03	0	0.03	<0.02	40
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<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	<0.01	0
Sum of PFAS	µg/L	0.01	2.25	2.12	6	2.25	1.131	66
Sum of PFHxS and PFOS	µg/L	0.01	1.84	1.74	6	1.84	1.131	48
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01 : 0.02 (Interlab)	1.1	1.05	5	**1.1**	**0.53**	**70**
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	0.03	0.04	29	0.03	0.021	35
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.74	0.69	7	0.74	0.58	24

*RPDs have only been considered where a concentration is greater than 1 times the LOR.
**High RPDs are in bold (Acceptable RPDs for each LOR multiplier range are: 200 (1-10 x LOR); 50 (10-20 x LOR); 30 (> 20 x LOR))
***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

DATA VALIDATION REPORT; Biota

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	08/12/2023
Site:	RAAF Base Darwin		
Matrix:	Biota	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney	**Date:**	18/12/2023
Lab reference:	ES2337477		

Key Findings:

The biota analytical data can be used as a basis for interpretation.

Component		Outliers			Material impact on interpretation
		No	Yes	Comment	
Frequency of field quality assurance/quality control			✓	1	No
Number of tests requested/reported			✓	2	Yes
Sample handling/preservation/holding times			✓	3	No
Frequency of laboratory QA/QC			✓	4	No
Limits of reporting (LOR)			✓	5	No
Blank analysis	Field blank	✓			No
	Rinsate blank	✓			No
	Trip blank	✓			No
	Method blank	✓			No
Field intra-laboratory relative percent differences (RPDs)		✓			No
Field inter-laboratory RPDs		✓			No
Laboratory duplicate RPDs		✓			No
Matrix spike (MS) % recoveries			✓	6	No
Laboratory control spike (LCS) % recoveries		✓			No
Surrogate % recoveries		✓			No
Other comments					No

Comments

1. Frequency of field quality assurance/quality control	A field blank sample was missed during the sample processing day. The precision of the data can be assessed as acceptable based on the available intra-laboratory duplicate RPDs which were reported at the required frequencies and within control limits.
2. Number of tests requested/reported	Inter-laboratory duplicate samples were collected and sent to NMI. There was an internal lab miscommunication and did not schedule the samples for analysis. The new scheduled reporting date is the 6 January 2024. AECOM will process these results upon receival and include in Revision 0 of report.
3. Sample handling/preservation	Sample receipt temperature (8.9°C) was slightly outside of the recommended range (≤6°C) in primary batch ES2337477. The inter-laboratory samples were received at the secondary laboratory frozen. Potential under reporting must be taken into consideration. However, as the inter-laboratory duplicate samples were received frozen, the primary samples being immediately cooled upon collection, and the primary RPDs being within control limits, the potential for under reporting is not considered to materially affect the interpretation of results.

DATA VALIDATION REPORT; Biota

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	08/12/2023
Site:	RAAF Base Darwin		
Matrix:	Biota	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney	**Date:**	18/12/2023
Lab reference:	ES2337477		

4. Frequency of Laboratory QA/QC	Laboratory duplicate samples were not reported for Per- and Polyfluoroalkyl substances (PFAS) method group in primary batch ES2337477. The precision of the data can be assessed as acceptable based on intra-laboratory duplicate RPDs which were reported at the required frequencies and within control limits. Matrix spikes were not reported at the required frequencies for PFAS method groups. The accuracy of the data can be assessed as acceptable based on method blanks, LCS and surrogate spike recoveries (which were reported at the required frequencies and within control limits).
5. MS % recoveries	Matrix spikes were not determined for Perfluorooctane sulfonic acid (PFOS) as background levels were greater than or equal to 4 x the spike levels. These non-determinations do not reflect method bias and do not affect data interpretation. The accuracy of the data can be assessed as acceptable based on method blanks, LCS and surrogate spike recoveries (which were reported at the required frequencies and within control limits).

Analyte	Recovery (%)	Range (%)	Comments
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	75.6	81.6 - 144	Recovery less than lower data quality objective

As there is no adopted guideline value for EtFOSA, the potential for under reporting is not expected to affect interpretation of the results against guidelines. However, this potential for under reporting should be taken into consideration when using the data quantitatively.

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QA/QC Blanks

Lab Report Number	**ES2337477**	**ES2337477**	**ES2337477**
Field ID	1302_QC304_231019	1302_QC504_231027	1302_QC505_231019
Sampled_Date	19/10/2023	27/10/2023	19/10/2023
Sample Type	Rinsate	Trip Blank	Trip Blank

Analyte	**Units**	**LOR**			
PFAS Full Suite					
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	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
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01

Data Validation Report
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PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Relative Percentage Differences

Lab Report Number	ES2337477	ES2337477		ES2337477	ES2337477		ES2337477	ES2337477		ES2337477	ES2337477	
Field ID	1302_BIOAFA315_231017	1302_QC148_231017	**RPD**	1302_BIOAFA316_231017	1302_QC149_231017	**RPD**	1302_BIOAFA317_231017	1302_QC150_231017	**RPD**	1302_BIOAFA318_231017	1302_QC151_231017	**RPD**
Sample Type	Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate	
Date	17/10/2023	17/10/2023		17/10/2023	17/10/2023		17/10/2023	17/10/2023		17/10/2023 13:30	17/10/2023 13:30	
Analyte	**Units**	**LOR**										
PFAS Full Suite												
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.005	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluorodecanoic acid (PFDA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorohexanoic acid (PFHxA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorononanoic acid (PFNA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.005	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluoropentanoic acid (PFPeA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
PFOS - Branched	mg/kg	0.001	0.001	<0.001	0	<0.001	0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
PFOS - Linear	mg/kg	0.001	0.002	0.002	0	<0.001	0.001	0	0.001	0.001	0	<0.001	<0.001	0
Sum of PFAS	mg/kg	0.001	0.003	0.002	40	<0.001	0.002	67	0.001	0.001	0	<0.001	<0.001	0
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.001	0.003	0.002	40	<0.001	0.002	67	0.001	0.001	0	<0.001	<0.001	0
Perfluorooctanoic Acid (PFOA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0

**High RPDs are in bold (Acceptable RPDs for each LOR multiplier range are: 200 (1-10 x LOR); 50 (10-20 x LOR); 30 (> 20 x LOR))
***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

Data Validation Report
Field RPDs
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Relative Percentage Differences

Lab Report Number		ES2337477	ES2337477		ES2337477	ES2337477		ES2337477	ES2337477		ES2337477	ES2337477	
Field ID		1302_BIOAFA331_231018	1302_QC152_231018	**RPD**	1302_BIOAFA332_231018	1302_QC153_231018	**RPD**	1302_BIOAFA333_231018	1302_QC154_231018	**RPD**	1302_BIOAFA334_231018	1302_QC155_231018	**RPD**
Sample Type		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate	
Date		18/10/2023 13:30	18/10/2023 13:30		18/10/2023 13:30	18/10/2023 13:30		18/10/2023 13:30	18/10/2023 13:30		18/10/2023 13:30	18/10/2023 13:30	
Analyte	**Units**	**LOR**											
PFAS Full Suite													
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.005	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluorodecanoic acid (PFDA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorohexanoic acid (PFHxA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorononanoic acid (PFNA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.005	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluoropentanoic acid (PFPeA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
PFOS - Branched	mg/kg	0.001	<0.001	0.001	0	<0.001	0.001	0	0.002	0.002	0	0.003	0.002	40
PFOS - Linear	mg/kg	0.001	0.003	0.004	29	0.006	0.004	40	0.012	0.01	18	0.014	0.015	7
Sum of PFAS	mg/kg	0.001	0.003	0.005	50	0.007	0.005	33	0.015	0.014	7	0.02	0.02	0
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.001	0.003	0.005	50	0.006	0.005	18	0.014	0.012	15	0.017	0.017	0
Perfluorooctanoic Acid (PFOA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.001	<0.001	<0.001	0	0.001	<0.001	0	0.001	0.002	67	0.003	0.003	0

**High RPDs are in bold (Acceptable RPDs for each LOR multiplier range are: 200 (1-10 x LOR); 50 (10-.
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any

Prepared for
Department of Defence Directorate of PFAS Remediation Environment and Engineering Branch
ABN: 68706814312

AECOM

Wet Season Sampling Event Factual Report, 2024

PFAS OMP - RAAF Base Darwin

03-Jul-2024
PFAS Ongoing Monitoring Plan

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Wet Season Sampling Event Factual Report, 2024

PFAS OMP - RAAF Base Darwin

Client: Department of Defence Directorate of PFAS Remediation Environment and Engineering Branch

ABN: 68706814312

Prepared by

,

03-Jul-2024

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Abbreviations

Term	Description
AECOM	AECOM Australia Pty Ltd
ALS	Australian Laboratory Services Environmental Pty Ltd
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999
AS/ANZ	Australia/New Zealand Standard®
Defence	Department of Defence
DIA	Darwin International Airport
DO	Dissolved oxygen
DoH	Department of Health
DQO	Data quality objectives
DQI	Data quality indicators
EC	Electrical conductivity
HEPA	Heads of Environmental Protection Agencies
LOR	Limit of reporting
NATA	National Association of Testing Authorities
NEMP 2.0	National Environmental Management Plan
NMI	National Measurement Institute
NT	Northern Territory
NSW	New South Wales
OMP	Ongoing Monitoring Plan
ORP	Oxidation-reduction potential
PFAS	Per- and poly-fluoroalkyl substances
PFHxS	Perfluorohexane sulfonic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PMAP	PFAS Management Area Plan
QA/QC	Quality Assurance/Quality Control
RAAF	Royal Australian Air Force
RPD	Relative Percentage Difference
SAQP	Sampling Analysis Quality Plan
SWL	Standing Water Level
TDS	Total dissolved solids

List of Units

Unit	Definition
^{o}C	degrees Celsius
cm	centimetre
mm	millimetre
L	litre
m	metre
mAHD	metres Australian Height Datum
mbtoc	metres below top of casing
mg	milligrams
mV	millivolts
µg	micrograms
µS	micro siemens

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) was engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) outlined in the *PFAS Management Area Plan (PMAP)* (Department of Defence, 2018) at Royal Australian Air Force (RAAF) Base Darwin (the 'Base') in the Northern Territory (NT). The locations of the Base and Management Area are shown on **Figure 1** in **Appendix A**. The OMP (Department of Defence, 2023) for the Base outlines the requirement to complete groundwater and surface water sampling biannually.

The primary purpose of the OMP (Department of Defence, 2023) is to monitor changes to the PFAS impact in groundwater, surface water and biota associated with sources of PFAS as initially assessed through the detailed site investigation phase of works. Changes may result from the specific or cumulative impact of remediation or containment actions, existing transportation trends, and changes to hydrogeology or weather events.

The monitoring plan at RAAF Base Darwin includes a regime of groundwater and surface water sampling to capture these changes in the long term, to enable Defence to maintain an up-to-date understanding of temporal and spatial distribution, concentration, and transport of PFAS contaminants.

This report details the scope and findings of 2023-2024 wet season monitoring activities, which were completed between October 2023 and April 2024.

1.2 Objectives

As noted above, the objective of the *PFAS OMP* (Department of Defence, 2023) is to provide information on changes to PFAS contamination originating from Defence property to inform risk management decisions by Defence to protect human health and the environment.

The purpose of this PFAS OMP factual report is to summarise the scope of works and findings from sampling works conducted between October 2023 and April 2024 in accordance with Revision 3 SAQP (AECOM, 2023). These works included:

- Annual biota sampling in October 2023
- Twice in wet season surface water sampling in December 2023 and March 2024
- PFAS mass-flux surface water measurements and sampling monthly during the wet season, December 2023 to April 2024
- Biannual groundwater sampling in March 2024

This report has been prepared in accordance with the *Defence PFAS OMP Factual Reports Guidance,* Version 0.2, May 2021 (Department of Defence, 2021a). An ongoing monitoring report (OMR) will be subsequently developed for the purpose of assessing the data collected during the discrete monitoring events completed over the preceding 12-month period (May 2023 through April 2024) and will include assessment of environmental variability and any statistically significant trends in PFAS concentrations.

2.0 Scope of work

The sampling event was completed in general accordance with the SAQP (AECOM, 2023). Prior to commencement of the sampling events, the SAQP (AECOM, 2023), was reviewed to ensure compliance with the following:

- Heads of the Environment Protection Authority (HEPA), PFAS National Environmental Management Plan (NEMP 2.0) (HEPA, 2020)
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM, 1999)
- The OMP (Department of Defence, 2023)
- Defence Routine Environment Water Quality Monitoring Manual (Department of Defence, 2019)
- AS/NZS 5667:1998 Water quality – Sampling (AS/NZS, 1998)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)

In summary, the scope of works completed for the wet season sampling included:

- October 2023:
  - Annual aquatic biota samples (fish and aquatic invertebrate) were collected in October 2023 from six locations using a combination of netting, trapping and hand collection (refer to **Table 1** and **Figure 2** in **Appendix A** for specific locations).
- December 2023:
  - Collection of 24 ‘twice in wet season’ surface water samples from 24 of 24 planned sampling locations (refer to Table 3 and **Figure 2, Appendix A** for specific locations).
  - Monthly in wet season collection of surface water samples was completed from four locations for the Base-wide PFAS mass flux investigation (refer to **Table 4** and **Figure 2** in **Appendix A** for specific locations).
- January 2024:
  - Monthly in wet season collection of surface water samples was completed from four locations for the Base-wide PFAS mass flux investigation (refer to **Table 4** and **Figure 2** in **Appendix A** for specific locations).
- February 2024:
  - Monthly in wet season collection of surface water samples was completed from four locations for the Base-wide PFAS mass flux investigation (refer to **Table 4** and **Figure 2** in **Appendix A** for specific locations).
- March 2024:
  - Collection of groundwater samples (including gauging of groundwater levels) from 33 of 34 existing monitoring wells (or designated alternatives) using Hydrasleeves™ (refer to **Table 2** and **Figure 3** in **Appendix A** for specific locations).
  - Collection of ‘twice in wet season’ surface water samples from 23 of 24 planned sampling locations (refer to **Table 3** and **Figure 2** for specific locations).
  - Monthly in wet season collection of surface water samples was completed from four locations for the Base-wide PFAS mass flux investigation (refer to **Table 4** and **Figure 2** in **Appendix A** for specific locations).
- April 2024:

- Monthly in wet season collection of surface water samples was completed from two of the four sampling locations for the Base-wide PFAS mass flux investigation (refer to **Table 4** and **Figure 2** in **Appendix A** for specific locations).

- Collection of intra- and inter-laboratory duplicate samples at a rate of 1 in 10 primary samples, one rinsate, one field blank sample per sampling day and one trip blank per cooler per event. Deviations from the collection of quality control (QC) samples are described in Section 2.2.
- Analysis of biota, surface water and groundwater samples for a suite of 28 PFAS analytes at the standard limit of reporting (LOR).
- Data management of the OMP field and laboratory data in the Defence ESdat database.
- Preparation of this Sampling Event Factual Report.

2.1 Planned monitoring locations

The monitoring locations outlined within the relevant SAQP **(AECOM, 2023)** for the biota sampling, groundwater sampling and surface water sampling events are tabulated below. Deviations from the planned sampling are highlighted in bold and detailed in Section 2.2 below.

Table 1 Annual biota sampling locations (collected in October 2023)

Area	Description	Sampling locations	Indicator/target capture	No. of locations	Total
Off-Base (biota)	Rapid Creek Freshwater – Upstream of Trower Road	BIOFA024, BIOFA026, BIOFA028	Crustaceans	3	6 locations
	Ludmilla Creek – Estuarine area	BIOFA016	Molluscs	1	
	Rapid Creek mouth – Casuarina Drive	BIOFA007	Diadromous or estuarine fish	1	
	Ludmilla Creek – Boat Ramp	BIOFA018	Diadromous or estuarine fish	1	

* The biota sampling locations in **Figure 2 (Appendix A)** are approximate, as exact locations vary depending on habitat available on the day of sampling.

Table 2 Biannual groundwater sampling locations sampled in March 2024 SAQP (AECOM, 2023)

Area	Description	Sampling locations	Number of wells/bores	Total
On-Base	Former fuel farm 1	MW215	1	22 locations
	Former fuel farm 5	MW297, **MW112***	2	
	Former fuel farms	MW303, MW133, MW205	3	
	Former fire training area 1	**MW422***, MW139, MW454	3	
	Current fire training area	MW240, MW241, MW453	3	
	RAAF fire station	MW103	1	
	Former Aviation Rescue Fire Fighting (ARFF) fire station	MW115	1	
	Source area downgradient transect	MW107, MW128	2	

Area	Description	Sampling locations	Number of wells/bores	Total
	Southern boundary of Base	MW141, MW144	2	
	Western boundary of Base	MW148, MW451, MW452	3	
	Rapid Creek – eastern end	MW156	1	
Off- Base	Former fire training area 2, Darwin International Airport (DIA)	MW197	1	12 locations
	Off-Base(north)	MW185	1	
	Rapid Creek	MW190, MW191, MW194, MW195	4	
	Off-Base (south)	MW176, MW180, MW200, MW209	4	
	Off-Base(southwest)	MW211	1	
	Off-Base (west)	MW210	1	

* Monitoring well MW112 is suspected to have been destroyed during upgrades to the taxiway. Monitoring well MW422 was decommissioned during the PFAS post remediation works and was replaced with MW502 and was sampled in lieu.

The monitoring locations outlined within the SAQP (AECOM, 2023) for the surface water sampling events are outlined in **Table 3** and **Table 4.**

Table 3 Twice in wet season surface water sampling locations in December 2023 and March 2024 SAQP (AECOM, 2023)

Area	Description	Sampling location code	Sampling frequency	Number of locations
On-Base	Surface water flow – current fire training ground	**SW156***	Twice yearly (Start-Wet season, end-Wet season) SW170 and SW312 are also sampled monthly through the Wet season (Dec – Apr)	**On-Base (8 locations)**
	Stormwater pipe - Airside operations	SW160		
	Stormwater– southern boundary	SW162		
	Surface water drain - near Former Fuel Farm 5	SW178		
	Surface water drain - north of Former Fuel Farms 4 & 6	SW181		
	Rapid Creek	SW152		
	Surface water drain - Eastern end of runway	SW170^		
	Drainage from FFTA1	SW312^		
Off-Base	Rapid Creek	SW104, SW106, SW108, SW112, SW113		**Off-Base (16 locations)**
	DIA drain to Rapid Creek	SW114, SW115, SW168		

Area	Description	Sampling location code	Sampling frequency	Number of locations
	Ludmilla Creek	SW120, SW124, SW125		
	Reichardt Creek	SW132, SW133		
	Drain to Sadgroves Creek	SW143		
	Osgood Drive	SW300^	Monthly sampling through Wet season (Dec – Apr)	
	Rapid Creek	SW109^	Monthly sampling through Wet season (Dec – Apr)	

*SW156 was unable to be sampled in March due to it being dry.

^ Surface water locations also being PFAS mass-flux monthly in wet season sample locations.

Table 4 Base- wide PFAS mass-flux monthly in wet season surface water locations completed between December 2023 and April 2023 SAQP (AECOM, 2023)

Area	Description	Sampling locations	Number of wells/bores	Total
On-Base	Surface water drain – Eastern end of runway	SW170	1	2 Locations
	Drainage from FFTA1	SW312	1	
Off-Base	Rapid Creek	SW109	1	2 Locations
	Osgood Road	SW300	1	

*SW300 and SW312 were unable to be sampled in April due to them being dry.

2.2 Deviations from the SAQP

The works completed during this sampling event included deviations from the SAQP (AECOM, 2023) as outlined below in **Table 5** below.

Table 5 Deviation from the SAQP (AECOM, 2023) during the monthly wet season PFAS Mass-Flux surface water sampling event

SAQP	Monthly in wet PFAS Mass-Flux surface water sampling	Impact on Program
Three of four surface water locations identified to be sampled have flow readings documented, as well as the total depth and depth to water recorded. SW109 has flow measurements recorded by a nearby stream gauge.	During the December PFAS Mass-Flux surface water sampling event, samples were collected at all four locations. However, flow readings, depth to water and total depth were not recorded.	While concentration data will be useful for understanding PFAS impacts at the time of sample collection, the lack of flow and calculated volume data will prevent this event from being used for PFAS mass flux calculations.
Four surface water locations are identified to be sampled as part of the monthly in wet season for the Base-	During the April 2024 PFAS Mass-Flux surface water sampling event, samples were collected from 2 of 4 locations. The following was not collected: • SW312 and SW300 as they were dry.	No impact – Only a cumulated 18.4 mm of rain was recorded at Darwin International Airport in April 2024. As PFAS mass flux only

SAQP	Monthly in wet PFAS Mass-Flux surface water sampling	Impact on Program
wide PFAS mass flux investigation.		occurs during active flow events PFAS mass flux calculations would not be impacted by resulting data set as it is demonstrated as having zero flux.
Geochemical parameters are to be recorded for surface water samples.	During the April 2024 PFAS Mass-Flux surface water sampling event, dissolved oxygen readings at SW170 were unable to be recorded due to water quality meter failure.	Minimal impact – dissolved oxygen readings from other locations are generally consistent with expected Base conditions.

Table 6 Deviation from the SAQP (AECOM, 2023) during the biannual groundwater sampling event in March 2024

SAQP	March sampling event	Impact on Program
34 groundwater locations are identified to be sampled as part of the sampling event.	During the biannual groundwater sampling event, samples were collected from 33 of 34 locations. The following was not collected: • MW112 is suspected to have been destroyed during the taxiway upgrades in 2023.	Minimal impact – loss of data. However, other groundwater samples were collected from down-gradient locations which monitor PFAS mobilisation and transport, reducing the impact of the data gap.
34 groundwater locations are identified to be sampled as part of the sampling event.	Groundwater monitoring well MW422 was decommissioned before the sampling event and replaced with newly installed monitoring well MW502. AECOM was informed by the Lead Consultant that MW502 has replaced MW422 and was considered suitable for use in PFAS OMP reporting.	No impact – MW502 is a replacement well for monitoring well MW422.
One rinsate (QC300) per sampling day.	During the biannual groundwater sampling event, only one rinsate blank was collected instead of two.	Minimal impact – The decontamination method of the sampling pole is assessed as acceptable and the potential for cross contamination via sampling methods is considered unlikely based on the following: • Concentrations of all analytes were reported below the LOR in the rinsate sample analysed. • All sampling equipment was either dedicated, disposable or decontaminated with a solution of water and Liquinox

SAQP	March sampling event	Impact on Program
		between sampling locations. • The decontamination methods and field staff were consistent over the course of the sampling event. • All reported groundwater sampling results were within expected concentration ranges.
One field blank (QC400) per sampling day.	During the biannual groundwater sampling event, only one field blank was collected instead of two.	Minimal impact - As the rinsate blank reported below LOR and thus, the lower than nominated frequency of field blanks is not material.

Table 7 Deviation from the SAQP (AECOM, 2023) during the twice in wet surface water sampling in December 2023 and March 2024

SAQP	Twice in wet surface water sampling	Impact on Program
Collection of field parameters at the surface water locations.	Field parameters failed to save on ALS Compass during the surface water sampling event in December 2023 for the following locations: - SW112 - SW113 - SW120 - SW109	Minor impact – data gap. Field parameters and observations were accurately saved during the March 2024 sampling event for the missing data locations during the December 2023 sampling event.
24 surface water sampling locations are to be collected twice in wet season.	Surface water location SW156 was dry and unable to be sampled in March 2024.	Minor impact – data gap. While specific PFAS concentration data was not collected from SW156 during the late wet season sampling event, downgradient sample location SW109 recorded PFAS concentrations within the expected range indicating it is unlikely that up-gradient locations such as SW156 would be contributing higher than expected PFAS concentrations to the localised drainage system.

3.0 Sampling methodology

The methodology adopted for the sampling events between October 2023 and April 2024 (where applicable) was in accordance with the SAQP (AECOM, 2023) and is summarised **Table 8** below.

Table 8 Sampling methodology

Item	Details
Aquatic biota sampling	
Aquatic biota target samples	Target species for each identified sample location were based on those that are recognised as consumed by the public from the following three groups: • Diadromous or estuarine fish (Barramundi, Flathead, Javelin, Sweetlips, Mullet, Rock Cod, Queenfish, Jewfish, etc.) • Molluscs (Longbums [Telescopium] and Whelk) • Crustaceans (Redclaw Crayfish [C. quadricarinatus.])
Aquatic biota sampling methodology	Sampling was conducted by Eco Logical Australia Pty Ltd and the Northern Territory (NT) Department of Fisheries between 17 and 25 October 2023. Ethics approvals and Fisheries/Parks & Wildlife licenses were obtained prior to biota sample collection. Estuarine fish were collected using 4-6-inch gill nets set three hours before low tide. Nets were continuously monitored from a small boat and cleared when movement was detected. Any non-target species were released immediately and where targeted biota species were identified, they were measured, weighed and euthanised humanely in accordance with the animal ethics permits conditions. Redclaw were captured using Opera House traps baited with raw beef (purchased from a supermarket). Traps were set overnight in freshwater pools and collected in the early morning. Longbums were hand-collected during low tide from the mangroves. Redclaw and Longbums were rinsed prior to being stored in snap-lock bags, euthanised by freezing and preserved frozen until preparation at NT Fisheries wet room laboratories. Samples were prepared for analysis at the Department of Fisheries laboratory prior to dispatching to the primary laboratory. This included the removal of scales/shell, head, and internal organs. Fillets were taken with skin intact and homogenised prior to sub-sampling and analysis. Samples were prepared based on the following procedure: • For Target fish: - Used opened bag as board cover. - Cleaned knife/blade with deionised water. - For large fish the complete tissue samples of edible flesh was collected. - For smaller fish, samples were provided whole with entrails removed. • For Redclaw Crayfish: - Rinsed in deionised water. - Composited whole as 50-100g samples (about 3-5 individuals per sample). • For Longbum: - Shells placed inside a sample bag and carefully smashed with a hammer, then tissue extracted with forceps. - Tissue rinsed with deionised water. - Composited 10 individuals as a sample. The weight, length, species, and location caught were recorded.
QA/QC samples	Field QA/QC samples collected included rinsate and split samples (intra-laboratory duplicates) which are described as the following: • Rinsate samples were taken from decontaminated sample processing equipment (Filleting knife).

Item	Details
	• Split samples were taken from fin fish to ensure homogeneity for intra-laboratory analysis rather than composite samples of crustaceans. Refer to **Appendix D** for data validation report of the results.
Sample analysis	In accordance with the Data Quality Objectives (DQO) outlined in the OMP SAQP (AECOM, 2023), samples collected were tested for the extended PFAS suite at National Association of Testing Authorities' (NATA) accredited laboratories. Primary and intra-laboratory duplicate samples were submitted to the primary laboratory, Australian Laboratory Services Environmental (ALS) Sydney, New South Wales (NSW). Inter-laboratory samples are sent to secondary laboratory, National Measurement Institute (NMI) Sydney, NSW. Chain of custody (COC) forms and laboratory certificates are presented in **Appendix E** and **Appendix F.**
Groundwater sampling	
Groundwater gauging	Groundwater gauging was conducted prior to collection of groundwater samples using an oil/water interface probe. Measurements included depth to light non-aqueous phase liquid (LNAPL) (if any), depth to water and total depth (if no product).
Field parameters	Where appropriate, field parameters were recorded ex-situ using a calibrated YSI Pro water quality meter (refer to **Appendix C** for calibration certificate). Parameters recorded consisted of the following: temperature (°C), electrical conductivity (EC), dissolved oxygen (DO), reduction- oxidation (redox) potential (ORP) and pH. Observations of odour, colour, and clarity (turbidity) of groundwater was recorded at each site.
Sampling methodology	Groundwater samples were collected from all accessible wells using the no-purge HydraSleeves™ method installed one-metre below the standing water level of each well for a minimum of 24 hours prior to the sampling. This was based on a review of the well construction log.
QA/QC samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples, rinsate, field blank and trip blank samples. Refer to **Appendix D** for data validation report of the results.
Sample analysis	In accordance with the Data Quality Objectives (DQO) outlined in the OMP (AECOM, 2023), samples collected were tested for the extended PFAS suite at National Association of Testing Authorities' (NATA) accredited laboratories. Primary and intra- laboratory duplicate samples were submitted to the primary laboratory, Australian Laboratory Services Environmental (ALS) Sydney, New South Wales (NSW). Inter-laboratory samples are sent to secondary laboratory, National Measurement Institute (NMI) Sydney, NSW. COC forms and laboratory certificates are presented in **Appendix E** and **Appendix F.**
Surface water sampling	
Sampling methodology	Surface water samples were collected from approximately 0.5 metres below the water surface or mid-column from shallow water locations to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container was lowered into the water, using an aluminium sampling pole, with the cap immediately applied once the container was full.
Field parameters	Where appropriate, field parameters were recorded ex-situ using a calibrated YSI Pro water quality meter (refer to **Appendix G** for calibration certificate). Parameters recorded consisted of the following: temperature, EC, DO, ORP and pH. Observations of odour, colour, and clarity (turbidity) and general flow observations were recorded at each site.
QA/QC samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples, rinsate, field blank and trip blank samples.

Item	Details
	Refer to **Appendix D** for data validation report of the results.
Sample analysis	In accordance with the Data Quality Objectives (DQO) outlined in the OMP (AECOM, 2023), samples collected were tested for the extended PFAS suite at National Association of Testing Authorities' (NATA) accredited laboratories. Primary and intra-laboratory duplicate samples were submitted to the primary laboratory, Australian Laboratory Services Environmental (ALS) Sydney, New South Wales (NSW). Inter-laboratory samples are sent to secondary laboratory, National Measurement Institute (NMI) Sydney, NSW. COC forms and laboratory certificates are presented in **Appendix E** and **Appendix F.**

3.1 Adopted screening criteria

Screening criteria were selected on the basis of national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset includes the following:

- Department of Health, 2019. Health based guidance values for PFAS for use in site investigations in Australia. April 2017 (as amended 2019) (Department of Health, 2019).
- Heads of the Environment Protection Authority (HEPA), PFAS National Environmental Management Plan (NEMP 2.0) (HEPA, 2020).
- National Environment Protection (Assessment of Site Contamination) Measure, 1999 (ASC NEPM).
- National Health and Medical Research Council (NHMRC), 2019. Guidance on Per and Polyfluoroalkyl Substances (PFAS) in Recreational Water (NHMRC, 2019).

The screening criteria which have been adopted for aquatic biota are presented below in **Table 9.**

Table 9 Summary of adopted screening criteria for consumption of aquatic biota

Pathway	Compound	Criteria	Comment/reference
Human health receptors			
Crustaceans	Perfluorooctane sulfonate (PFOS) and PFOS + perfluorohexane sulfonate (PFHxS)	65 µg/kg	Department of Health (2019) *Derivation: Children 2-6 years, median consumption* Occasionally consumed food. Trigger criteria for investigation for crustaceans apply to molluscs due to the small number of consumers of molluscs.
	Perfluorooctanoic acid (PFOA)	520 µg/kg	
Finfish	PFOS and PFOS + PFHxS	5.2 µg/kg	Department of Health (2019). *Derivation: Children 2-6 years, P90 consumption*
	PFOA	41 µg/kg	

The screening criteria which have been adopted for groundwater and surface water are presented in **Table 10.**

Table 10 Summary of adopted screening criteria for groundwater and surface water

Pathway	Compound	Criteria	Comment/Reference
Human health receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	These values are from the PFAS NEMP 2.0 (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values presented in the PFAS NEMP 2.0 (HEPA, 2020) are from the Guidance on Per and Polyfluoroalkyl (PFAS) in Recreational Water (NHMRC, 2019) guidance on the assessment of PFAS in recreational water released in August 2019. *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological receptors			
Freshwater (99% species protection values) – groundwater and surface water	PFOS	0.00023 µg/L	These values are from the PFAS NEMP 2.0 (HEPA, 2020). The 99% level of protection has been applied for slightly to moderately disturbed ecosystems. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. For the purposes of preliminary screening of analytical water results, the laboratory LOR will be adopted rather than sole use of the criteria value. *All groundwater and surface water results will be compared to these criteria.*
	PFOA	19 µg/L	

3.2 Data quality objectives and data validation

The data quality objectives (DQOs) and data quality indicators (DQIs) adopted for these works are presented in the SAQP (AECOM, 2023).

Data validation assessment is provided in **Appendix D.**

Key findings from the data validation were as follows:

- Data validation procedures employed in the assessment of the field and laboratory QA/QC data are indicative that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report. The data validation findings did not flag potential material inaccuracies with any analytical results.
- The potential exists for concentrations of PFOS to be above the adopted *PFAS Freshwater 99% Species Protection guideline* (0.00023 µg/L) (HEPA, 2020), but below the laboratory LOR (0.01 µg/L) for the following surface water samples:
  - 1302_SW114_231213
  - 1302_SW115_231213
  - 1302_SW124_231206
  - 1302_SW178_231213
  - 1302_SW300_240124
  - 1302_SW115_240306

- 1302_QC200_240306

March 2024:

- Elevated relative percentage differences (RPDs) should be taken into consideration when interpreting concentrations for PFOS close to guidelines in all groundwater samples excluding 1302_MW209_240305.

April 2024:

- Elevated RPDs for the surface water samples should be taken into consideration when interpreting concentrations for PFOS close to guidelines.

4.0 Field observations and results

4.1 General field observations

The following field observations were applicable across the Base during the sampling events and is provided in **Table 11.**

Table 11 General field observations

Item	Observation
Weather conditions – Biota sampling event	Weather during the 17-25 October 2023 biota sampling event was observed to be hot and humid. No rainfall was recorded at the nearest rain gauging station (Darwin Airport) on the sampling field dates (Bureau of Meteorology, 2023).
Weather conditions - surface water sampling events	Weather conditions between the 6th and 14th of December 2023 for the PFAS mass flux and start of wet season surface water sampling event was characterised by moderate to high temperature, moderately humid and experienced rainfall. Rainfall was recorded at the nearest rain gauging station (Darwin Airport) on the sampling field dates with 4.6 mm of rain being recorded (Bureau of Meteorology, 2023). Weather conditions during the 24 January 2024 mass flux surface water event was characterised as having moderate to high temperature, high humidity and experiencing rainfall. Rainfall was recorded at the nearest rain gauging station (Darwin Airport) on the sampling field dates with 28.2 mm of rain being recorded (Bureau of Meteorology, 2023). Weather conditions during the 15 February 2024 mass flux surface water event was characterised as having moderate to high temperature, moderate humidity and experiencing rainfall. Rainfall was recorded at the nearest rain gauging station (Darwin Airport) on the sampling field dates with 4.8 mm of rain being recorded (Bureau of Meteorology, 2023). Weather conditions during the 6 March 2024 end of wet season and mass flux surface water sampling event was characterised as having high temperatures, moderate humidity and experiencing rainfall. Rainfall was recorded at the nearest rain gauging station (Darwin Airport) on the sampling field dates with 4.8 mm of rain being recorded (Bureau of Meteorology, 2023). Weather conditions during the 30 April 2024 mass flux surface water event was characterised as having moderate to high temperatures, moderate humidity and experiencing rainfall. Rainfall was recorded at the nearest rain gauging station (Darwin Airport) on the sampling field dates with 0.2 mm of rain being recorded (Bureau of Meteorology, 2023).
Weather conditions - groundwater sampling events	Weather conditions during the 4th and 5th of March 2024 groundwater event was characterised as hot, humid and dry. Rainfall was recorded at the nearest rain gauging station (Darwin Airport) on the sampling field dates with 0.4 mm of rain being recorded (Bureau of Meteorology, 2023). Weather conditions during the 19th and 20th of March 2024 groundwater event was characterised as hot, humid and dry. 0.3 mm of rainfall was recorded at the nearest rain gauging station (Darwin Airport) on the sampling field dates (Bureau of Meteorology, 2023).
Estate Management Works or Training Activities	During the sampling event, no notable estate works, or training activities were observed in the vicinity of sampling locations with the exception of the following: • Earth moving activities occurring air side of the RAAF Base.

4.2 Biota

4.2.1 Field observations and field measurements

Table 12 Biota observations

Item	Observation
Field Observations	Sample descriptions were provided by NT Fisheries field staff following the biota sampling event via an excel spreadsheet, noting species type, weight, and number of specimens. These are presented in **Appendix B.**
Access and Sample Collection	All monitoring locations were accessible and able to be sampled. Fish and invertebrate species collected and analysed included: **Ludmilla Creek (BIOFA018):** King Salmon *(Polydactylus macrochir)* Barramundi (Lates calcarifer) Queenfish (Scomberoides commersonnianus) Forktail Catfish 1 (Neoarius sp.1) Sea Mullet (Mugil cephalus) Northern Whiting (Sillago sihama) Sand Crab (Portunus pelagicus) **Rapid Creek (BIOFA007):** Mangrove Jack (Lutjanus argentimaculatus) Forktail Catfish 1 (Neoarius sp.1) Forktail Catfish 2 (Neoarius sp.2) Banded Archerfish (Toxotes jaculatrix) Milkfish (Chanos chanos) Tarpon (Megalops cyprinoides) Sea Mullet (Mugil cephalus) **Ludmilla Creek (BIOFA016):** Giant Mangrove Whelk (Terebralia palustris) Long Bum (Telescopium telescopium) **Rapid Creek (BIOFA024and BIOFA028):** Redclaw Crayfish (Cherux quadricarinatus) **Rapid Creek (BIOFA026):** Redclaw Crayfish (Cherux quadricarinatus) Cherabin (Macrobrachium spinipes)

4.2.2 PFAS biota analytical results

Results from the October 2023 biota sampling event reported 38 of 48 primary samples above the LOR for PFAS. Sampling area BIOFA007 had nine of 17 samples that exceeded the adopted screening criteria for finfish for PFOS concentrations. Sampling area BIOFA018 had one of 16 samples that exceeded the adopted screening criteria for finfish for PFOS concentrations. The PFAS biota analytical results are presented in **Appendix B**.

4.3 Surface water

4.3.1 Field observations and field measurements

Field data was collected on data forms and the data was uploaded into ESdat for development of report tables. Field data tables are presented in **Appendix B Table 2.**

Table 13 Surface water observations and field measurements

Compound	Criteria
Fieldwork Dates	The surface water samples, and field parameters for all wet season surface water events were collected on the following dates: • 6-14 December 2023 – Start of wet season and mass flux surface water • 24 January 2024 – Mass flux surface water • 15 February 2024 – Mass flux surface water • 6 March 2024 – End of wet season and mass flux surface water • 30 April 2024 – Mass flux surface water
Access and Sample Collection	All surface water locations were accessible and able to be sampled, with the following exceptions: • March 2024 end of wet season sampling event – SW156 was not sampled due to the location being dry • April 2024 mass flux surface water sampling event – SW300 and SW312 was not sampled due to the locations being dry
Field observations	The following observations were noted in the surface water sampling events and is to be noted that said observations are qualitative descriptions. The water conditions and descriptions are presented in **Appendix B, Appendix C** and **Table 2**: December 2023 start of wet season and mass flux surface water: • SW106, SW108, SW115, SW124, SW125, SW143 and SW168 reported moderate turbidity • SW132 reported high turbidity • SW143 reported an organic sheen January 2024 mass flux surface water: • SW109 reported moderate turbidity • SW300 reported high turbidity February 2024 mass flux surface water: • SW312 reported moderate turbidity • SW300 reported high turbidity March 2024 end of wet season and mass flux surface water: • SW109, SW312, SW108, SW115, SW120, SW143, SW152, SW162 reported moderate turbidity • SW104, SW106, SW109, SW112, SW113, SW114, SW124, SW125, SW132, SW133, SW160, SW168, SW181, SW300, SW312 reported high turbidity • SW152, SW162 and SW170 reported an organic sheen April 2024 mass flux surface water: • SW109 and SW170 reported high turbidity
Surface water flow	Rapid Creek system generally had high flows with low turbidity and no sheen. On-Base drainage areas varied with pooled water to moderate flow from recent precipitation with low to moderate turbidity. DIA drainage systems had moderate flow and moderate turbidity. All other peripheral sampling locations, being coastal, were sampled during outgoing tides, that were characterised with moderate flow and relatively high salinity.

Compound	Criteria
Water quality measurements	Surface water quality measurements were measured after the collection of surface water samples. The stabilised readings are presented in **Table 2** in **Appendix B**, and are summarised below: December start of wet season and mass flux surface water: • DO ranged from 1.57 mg/L (SW160) to 10.35 mg/L (SW125) indicating hypoxic to oxygenated conditions • EC ranged from 9.5 µS/cm (SW181) to 580.27 µS/cm (SW124) indicating freshwater conditions • pH ranged from 4.75 (SW274) to 9.16 (SW125 and SW300) indicating slightly acidic to alkaline conditions • Redox (corrected) ranged from 202.6 mV (SW114) to 323.6 mV (SW300), indicating oxidising conditions. January mass flux surface water: • DO ranged from 74.9 mg/L (SW170) to 113.6 mg/L (SW109) indicating well oxygenated conditions • EC ranged from 52.3 µS/cm (SW170) to 113.9 µS/cm (SW300) indicating freshwater conditions • pH ranged from 6.8 (SW170) to 7.6 (SW109) indicating neutral conditions • Redox (corrected) ranged from 256.6 mV (SW109) to 293.3 mV (SW170), indicating oxidising conditions. February mass flux surface water: • DO ranged from 4.1 mg/L (SW300) to 5.67 mg/L (SW312) indicating oxygenated conditions • EC ranged from 30.4 µS/cm (SW312) to 53.1 µS/cm (SW300) indicating freshwater conditions • pH ranged from 5.81 (SW170) to 7.96 (SW312) indicating slightly acidic to neutral conditions • Redox readings were unable to be correctly recorded due to a water quality meter malfunction. March end of wet season and mass flux surface water: • DO ranged from 0.53 mg/L (SW160) to 5.16mg/L (SW112) indicating oxygenated conditions • EC ranged from 27.6 µS/cm (SW312) to 42,836 µS/cm (SW124) indicating freshwater to brackish conditions • pH ranged from 5.38 (SW168) to 8.5 (SW125) indicating slightly acidic to slightly alkaline conditions • Redox (corrected) ranged from 291.1 mV (SW109) to 380.2 mV (SW124), indicating oxidising conditions. April mass flux surface water: • DO for SW109 was 2.48 mg/L indicating oxygenated conditions • EC ranged from 49.3 µS/cm (SW109) to 83.6 µS/cm (SW170) indicating freshwater conditions • pH ranged from 4.82 (SW170) to 5.81 (SW109) indicating slightly acidic conditions • Redox (corrected) ranged from 357.6 mV (SW109) to 372.4 mV (SW170), indicating oxidising conditions.

4.3.2 PFAS surface water analytical results

The PFAS surface water analytical results from all sampling events are presents in **Appendix B, Table 3** and spatially on **Figure 2** in **Appendix A**.

December start of wet season and mass flux surface water:

During the December 2023 'start of wet season' and mass flux surface water sampling event, 20 of 24 sampled locations reported Sum of PFHxS and PFOS concentrations above the laboratory LOR. No samples for Sum of PFHxS and PFOS concentrations were reported above the *PFAS NEMP 2020 Recreational Water* guideline (HEPA, 2020). All surface water samples reported PFOS concentrations above the adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020). All samples also reported above the laboratory LOR, excluding SW114, SW115, SW124, SW178. However, the potential exists for PFOS concentrations to be above the adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020) but below the laboratory LOR for the above surface water samples.

There were no first-time detections or new exceedances at any surface water monitoring locations.

January mass flux surface water:

During the January 2024 mass flux surface water sampling event, three (SW109, SW170 and SW312) of four sampled locations reported Sum of PFHxS and PFOS concentrations above the laboratory LOR. All locations reported Sum of PFHxS and PFOS concentrations below the *PFAS NEMP 2020 Recreational Water guideline* (HEPA, 2020). The same three locations reported PFOS concentrations above the laboratory LOR and adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020).The potential exists for PFOS concentrations to be above the adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020) but below the laboratory LOR for SW300.

All locations within this sampling round reported PFOA concentrations below the laboratory LOR and adopted human health and ecological protection guidelines (HEPA, 2020).

There were no first-time detections or new exceedances at any surface water monitoring locations.

February mass flux surface water:

During the February 2024 mass flux surface water sampling event, all (SW109, SW170, SW300 and SW312) four sampled locations reported Sum of PFHxS and PFOS concentrations above the laboratory LOR, but below the *PFAS NEMP 2020 Recreational Water* guideline (HEPA, 2020). All locations reported PFOS concentrations above the laboratory LOR and adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020).

SW170 and SW300 reported PFOA concentrations above the laboratory LOR but below the adopted human health and ecological guidelines (HEPA, 2020).

There were no first-time detections or new exceedances at any surface water monitoring locations.

March end of wet season and mass flux surface water:

During the March 2024 'end of wet season' and mass flux surface water sampling event, 22 of 23 sampled locations reported Sum of PFHxS and PFOS concentrations above the laboratory LOR (HEPA, 2020). Four locations (SW104, SW114, SW125, SW312) reported Sum of PFHxS and PFOS concentrations above the *PFAS NEMP 2020 Recreational Water* guideline (HEPA, 2020).

The same 22 locations reported PFOS concentrations above the laboratory LOR and adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020).The potential exists for PFOS concentrations to be above the adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020) but below the laboratory LOR for SW115.

SW104, SW106, SW108, SW109, SW112, SW114, SW120, SW125, SW168, SW300 and SW312 reported PFOA concentrations above the laboratory LOR but below the adopted human health and ecological guidelines (HEPA, 2020).

There were no first-time detections or new exceedances at any surface water monitoring locations.

April mass flux surface water:

During the April mass flux surface water sampling event, SW109 and SW170 reported Sum of PFHxS and PFOS concentrations above the laboratory LOR but below the *PFAS NEMP 2020 Recreational Water* guideline (HEPA, 2020). All locations reported PFOS concentrations above the laboratory LOR and adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020).

SW109 reported PFOA concentrations above the laboratory LOR but below the adopted human health and ecological guidelines (HEPA, 2020).

There were no first-time detections or new exceedances at any surface water monitoring locations.

4.4 Groundwater

4.4.1 Field observations and field measurements

Field data was collected on data forms and the data was uploaded into ESdat for development of report tables. Field data tables are presented in **Table 4** in **Appendix B.**

Table 14 Groundwater observations and field measurements

Item	Observations and field measurements
Fieldwork Dates	The groundwater sampling event was completed on 4 and 5 March 2024 and 19 and 20 March 2024.
Access and Sample Collection	All monitoring wells and bores were accessible and able to be sampled with the exception of the following: • MW422 was not sampled due to being decommissioned during the PFAS post remediation works. Monitoring well MW502 was sampled in lieu. • MW112 was not sampled due to being suspected of being destroyed during the taxiway upgrades.
Monitoring Well Network Condition	The monitoring well network (refer to **Figure 3**) was generally in good condition.
Field Observations	Monitoring wells MW241 and MW297 was observed to emit a strong hydrocarbon odour.
Depth to Groundwater and flow direction	Depth to groundwater was recorded from 31 of 33 groundwater wells visited, ranging from 0.473 (MW185) to 6.98 (MW144) mbtoc. Groundwater elevations in the aquifer were between 4.99 (MW210) and 29.37 (MW139) metres Australian Height Datum (mAHD). Groundwater gauging data is presented in **Table 4** in **Appendix B.** Inferred groundwater contours and groundwater flow directions at the Base in March 2024 are shown on **Figure 4** in **Appendix A**. A localised high point is located in the central portion of the Base with groundwater flows radiating outwards from this area.
Geochemical parameters	Groundwater geochemical parameters were measured during sample collection from the HydraSleeve™ using a sterilised YSI cup and YSI Pro Water Quality Meter. The readings are presented in **Table 4** in **Appendix B**, and YSI calibration certificate in **Appendix G** and are summarised below: • DO ranged from 0.95 mg/L (MW297) to 5.28 mg/L (MW180) indicating hypoxic to oxygenated conditions • EC ranged from 2.1 µS/cm (MW211) to 1,622 µS/cm (MW209) indicating freshwater • pH ranged from 4.66 (MW115) to 6.33 (MW451), indicating slightly acidic to neutral conditions. • ORP (corrected) ranged from 213.6 mV (MW297) to 395.9 mV (MW141) indicating oxidising conditions.

4.4.2 PFAS groundwater analytical results

The PFAS groundwater analytical results from the March 2024 sampling event are presented in **Table 5** in **Appendix B.**

During the March 2024 biannual end of wet season groundwater sampling event, 32 of 33 sampled locations (all but MW209 located to the southwest of the Base) reported Sum of PFHxS and PFOS concentrations above the laboratory LOR and above the *PFAS NEMP 2020 Drinking Water* guideline (HEPA, 2020).

The same 32 locations reported PFOS concentrations above the laboratory LOR and adopted *PFAS NEMP 2020 Drinking Water* guideline (HEPA, 2020).The potential exists for PFOS concentrations to be above the adopted *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020) but below the laboratory LOR for sample MW209.

21 out of 33 groundwater samples reported PFOA concentrations above the laboratory LOR. Six samples (MW133, MW240, MW241, MW303 and MW453) reported PFOA above *PFAS NEMP 2020 Drinking Water* guideline. No groundwater samples reported PFOA above the *PFAS NEMP 2020 Freshwater 99%* guideline (HEPA, 2020).

There were no first-time detections or new exceedances at any groundwater monitoring locations.

5.0 Summary and next sampling events

5.1 Summary of monitoring event

Sampling for the PFAS OMP during the reported monitoring period included:

- Annual sampling of biota from Rapid and Ludmilla Creeks for biota species. Biota sampling was conducted in October 2023.
- Start of wet season surface water sampling in December 2023 from 24 of 24 sampling locations in December 2023.
- Biannual groundwater sampling of 33 of 34 planned monitoring wells (or designated alternatives) in March 2024, as MW112 is suspected to have been destroyed during the taxiway upgrade.
- End of wet season surface water sampling from 23 of 24 planned sampling locations in March 2024 as SW156 presented as dry.
- Monthly in wet season collection of surface water samples from four of four planned locations for the Base-wide Mass Flux PFAS Investigation from December 2023 to March 2024. Two of four planned locations were sampled in April, where SW300 and SW312 presented as dry.

The findings of the sampling events and the recommended actions are summarised in **Table 15** below.

Table 15 Summary of Sampling Event

Item	Comment	Recommended actions
Access to sampling locations	Majority of monitoring locations were accessible during the sampling events. The missed locations are as follows: - SW156 presented as dry during the March 2024 sampling event - MW112 is suspected to have been destroyed during the runway upgrades during 2023. - MW422 was decommissioned before the sampling event and replaced with newly installed MW502. AECOM was informed by the Lead Consultant that MW502 has replaced MW422 and was considered suitable for use in PFAS OMP reporting.	Continue monitoring in accordance with the SAQP and PMAP. It is recommended that MW502 is continued to be sampled in lieu of decommissioned groundwater monitoring well MW422. OMP update recommendations should be addressed through the OMR and by the LC. An evaluation of monitoring location MW112 should be conducted after completion of runway upgrade works to determine if the well is still accessible or if replacement of the well is required.
First-time detection of PFHxS+PFOS or PFOA in groundwater and surface water	None	Continue monitoring in accordance with the SAQP and PMAP.

Item	Comment	Recommended actions
New exceedance of NEMP 2.0 (HEPA, 2020) drinking water guideline values in groundwater	None	Continue monitoring in accordance with the SAQP and PMAP.
New exceedance of NEMP 2.0 (HEPA, 2020) recreational water guideline values in surface water	None	Continue monitoring in accordance with the SAQP and PMAP.
New exceedance of NEMP 2.0 (HEPA, 2020) ecological water guideline value for surface water	None	Continue monitoring in accordance with the SAQP and PMAP.
Sum of PFHxS+PFOS and/or sum of PFAS concentrations show an increasing trend in groundwater and surface water.	This will be evaluated in the next ongoing monitoring report.	Continue monitoring in accordance with the SAQP and PMAP.
Sum of PFHxS+PFOS and/or sum of PFAS concentrations show a decreasing trend in groundwater and surface water	This will be evaluated in the next ongoing monitoring report.	Continue monitoring in accordance with the SAQP and PMAP.

5.2 Upcoming sampling events

The next surface water sampling event will be the June 2024 mass flux surface water sample collection from Rapid Creek (SW109).

The next annual ongoing monitoring report will be completed in third quarter of 2024.

6.0 References

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Appendix A

Figures

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DATUM GDA 1994, PROJECTION MGA ZONE 52

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Kilometres

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LEGEND

- RAAF Base Darwin
- Source Area
- Management Area
- Drainage
- Highway

ID	Inferred PFAS Source Area
01	Former Fire Training Ground 1
02	Former Fuel Farm 5
03	Former Fuel Farm 4
04	Former Fuel Farm 6
05	AFFF Contaminated Soil Stockpiles
06	Former ARFF Fire Station
07	Hanger 31
08	Former Fuel Farm 1
09	Former RAAF Fire Station
10	Former Fire Training Ground 2
11	Current Fire Training Ground

Data sources

Base Data: Imagery (c) NTLIS

Department of Defence
RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Wet Season Sampling Factual Report 2024

PFAS Management Area

PROJECT ID	60612561
CREATED BY	[redacted]
LAST MODIFIED	GAOB 08 MAY 2024
VERSION	1

Figure 1

A3 size

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DATUM GDA 1994, PROJECTION MGA ZONE 52

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Metres

1:35,000 (when printed at A3)

LEGEND

- RAAF Base Darwin
- RAAF Darwin Airside Zone
- Watercourses
- Surface Water Sample Locations
- Biota Sampling Location

Note:
- Biannual sampling consists of end of wet season On-Base/Off-Base sampling event and end of dry season On-Base/Off-Base sampling event.
- Monitoring locations SW170, SW300, SW312 sampled monthly from December 2023 through to April 2024 as part of the Base-wide PFAS mass flux investigation.
- Monitoring location SW109 sampled monthly from December through April, and in June and August as part of the Base-wide PFAS mass flux investigation.
- SW156 unable to be sampled in March 2024 due to presenting as dry.
- SW312 and SW300 unable to be sampled in April 2024 due to presenting as dry.

Data sources:

Base Data: Imagery (c) NTLIS

Department of Defence
RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Wet Season Sampling Factual Report 2024

Surface Water and Biota Sampling Locations

PROJECT ID	60612561
CREATED BY	[redacted]
LAST MODIFIED	ROB.MCGREGOR 07 JUN 2024
VERSION:	1

Figure 2

A3 size

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DATUM GDA 1994, PROJECTION MGA ZONE 52

0 200 400 600 800 1,000

Metres

1:20,000 (when printed at A3)

LEGEND

- RAAF Base Darwin
- Source Area
- Watercourses
- Highway
- Bi-annual Monitoring Locations

Note:
• MW422 was decommissioned and replaced with MW502.

ID	Inferred PFAS Source Area
01	Former Fire Training Ground 1
02	Former Fuel Farm 5
03	Former Fuel Farm 4
04	Former Fuel Farm 6
05	AFFF Contaminated Soil Stockpiles
06	Former ARFF Fire Station
07	Hanger 31
08	Former Fuel Farm 1
09	Former RAAF Fire Station
10	Former Fire Training Ground 2
11	Current Fire Training Ground

Data sources:

Base Data: Imagery (c) NTLIS

Department of Defence
RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Wet Season Sampling Factual Report 2024

Groundwater Sampling Locations

PROJECT ID	60612561
CREATED BY	[redacted]
LAST MODIFIED	GAOB 29 MAY 2024
VERSION:	1

Figure
3

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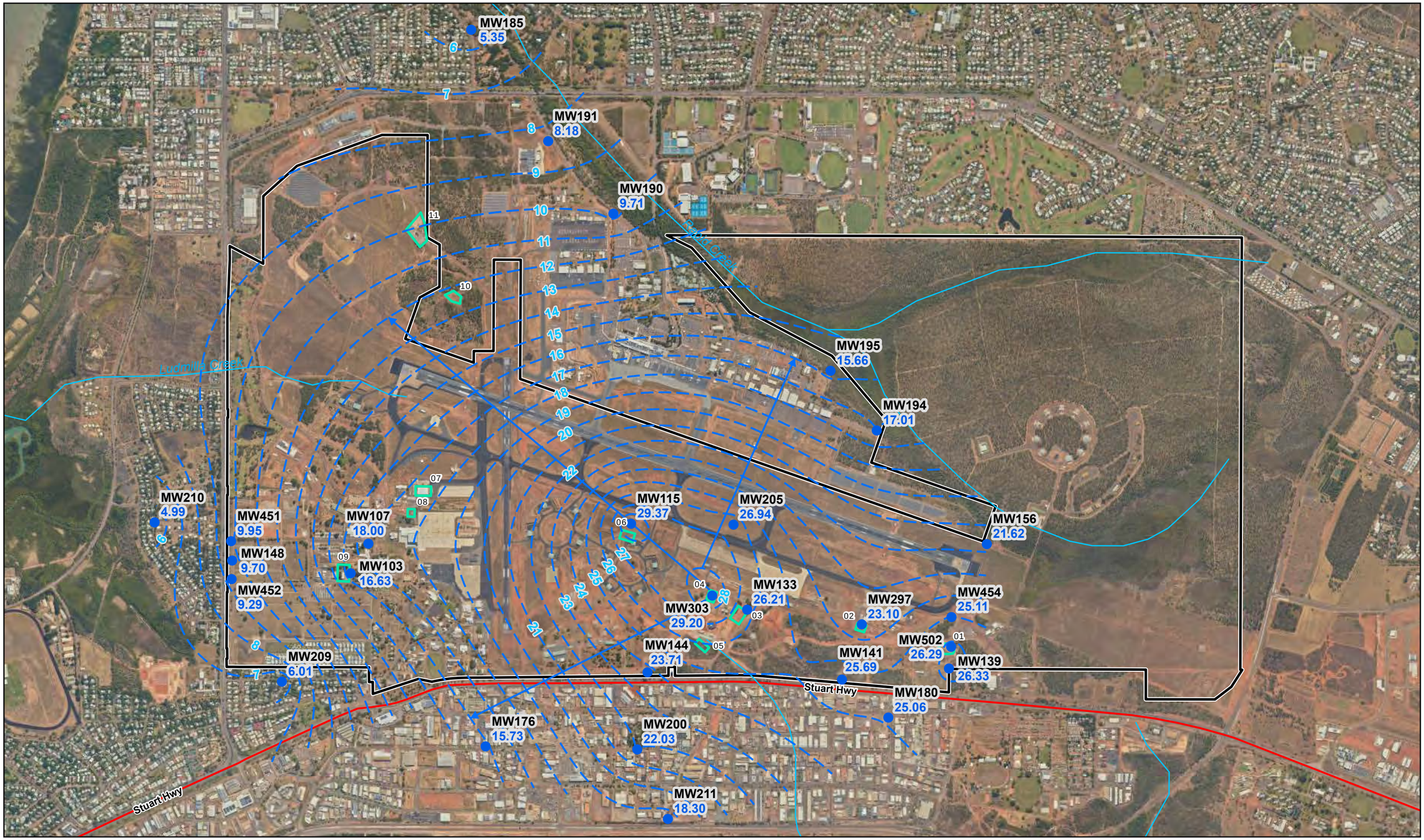

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DATUM GDA 1994, PROJECTION MGA ZONE 52

0 200 400 600 800 1,000

Metres

1:20,000 (when printed at A3)

LEGEND

- RAAF Base Darwin
- Source Area
- Highway
- Watercourses
- Bi-annual Monitoring Locations
- Inferred Groundwater Level
- Inferred Groundwater Direction

ID	Inferred PFAS Source Area
01	Former Fire Training Ground 1
02	Former Fuel Farm 5
03	Former Fuel Farm 4
04	Former Fuel Farm 6
05	AFFF Contaminated Soil Stockpiles
06	Former ARFF Fire Station
07	Hanger 31
08	Former Fuel Farm 1
09	Former RAAF Fire Station
10	Former Fire Training Ground 2
11	Current Fire Training Ground

Data sources:

Base Data: Imagery (c) NTLIS

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RAAF BASE DARWIN
PFAS Ongoing Monitoring Plan
Wet Season Sampling Factual Report 2024

Inferred Groundwater Contours

PROJECT ID	60612561
CREATED BY	[redacted]
LAST MODIFIED	GAOB 29 MAY 2024
VERSION:	1

Figure
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Appendix B

Tables

Table 1
Analytical Results
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Table 1 - Biota Analytical Results

AECOM

		Biota		PFAS Full Suite																																		
		Number of specimens	Weight of Sample Prepared	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	PFOS - Branched	PFOS - Linear	Sum of PFAS	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorohexane sulfonic acid (PFHxS)
		-	g	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	mg/kg	mg/kg	mg/kg
	LOR		0.1	0.002	0.002	0.002	0.002	0.002	0.001	0.002	0.005	0.001	0.002	0.001	0.005	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.005	0.001	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
FSANZ 2017 2-6 years Crustaceans (all species)																																	**0.065**	**0.52**	**0.065**		
FSANZ 2017 2-6 years Finfish (all species)																																	0.005	**0.041**	**0.005**		
Location ID	**Field_ID**	**Date**	**Lab Report**	**Fauna Group**	**Sample Type**	**Common Name**																																	
BIOFA007	1302_BIOAFA331_231018	18/10/2023	ES2337477	Fish	Normal	Mangrove Jack (Lutjanus argentimaculatus)	1	63.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	0.003	0.003	0.003	<0.001	<0.001
BIOFA007	1302_QC152_231018	18/10/2023	ES2337477	Field_D	Mangrove Jack (Lutjanus argentimaculatus)	1	59.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.004	0.005	0.005	<0.001	<0.001
BIOFA007	1302_QC203_231018	18/10/2023	RN1417767	Fish	Interlab_D	Mangrove Jack (Lutjanus argentimaculatus)	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.005	<0.0005	<0.001	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			0.0041	<0.0001	<0.0003
BIOFA007	1302_BIOAFA332_231018	18/10/2023	ES2337477	Fish	Normal	Forktail Catfish 1 (Neoarius sp.1)	1	71.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	0.006	0.007	0.006	<0.001	0.001
BIOFA007	1302_QC153_231018	18/10/2023	ES2337477	Fish	Field_D	Forktail Catfish 1 (Neoarius sp.1)	1	45.8	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.004	0.005	0.005	<0.001	<0.001
BIOFA007	1302_QC204_231018	18/10/2023	RN1417767	Fish	Interlab_D	Forktail Catfish 1 (Neoarius sp.1)	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.005	<0.0005	<0.001	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			0.0057	0.00015	0.0011
BIOFA007	1302_BIOAFA333_231018	18/10/2023	ES2337477	Fish	Normal	Forktail Catfish 1 (Neoarius sp.1)	1	82.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.002	0.012	0.015	0.014	<0.001	0.001
BIOFA007	1302_QC154_231018	18/10/2023	ES2337477	Fish	Field_D	Forktail Catfish 1 (Neoarius sp.1)	1	41.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.002	0.01	0.014	0.012	<0.001	0.002
BIOFA007	1302_BIOAFA334_231018	18/10/2023	ES2337477	Fish	Normal	Forktail Catfish 1 (Neoarius sp.1)	1	52	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.003	0.014	0.02	0.017	<0.001	0.003
BIOFA007	1302_QC155_231018	18/10/2023	ES2337477	Fish	Field_D	Forktail Catfish 1 (Neoarius sp.1)	1	43.5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.002	0.015	0.02	0.017	<0.001	0.003
BIOFA007	1302_BIOAFA335_231018	18/10/2023	ES2337477	Fish	Normal	Forktail Catfish 2 (Neoarius sp.2)	1	50	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.024	0.025	0.025	<0.001	<0.001
BIOFA007	1302_BIOAFA336_231018	18/10/2023	ES2337477	Fish	Normal	Forktail Catfish 2 (Neoarius sp.2)	1	38	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.003	0.043	0.046	0.046	<0.001	<0.001
BIOFA007	1302_BIOAFA337_231018	18/10/2023	ES2337477	Fish	Normal	Forktail Catfish 2 (Neoarius sp.2)	1	43	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.003	0.081	0.084	0.084	<0.001	<0.001
BIOFA007	1302_BIOAFA338_231018	18/10/2023	ES2337477	Fish	Normal	Banded Archerfish (Toxotes jaculatrix)	1	64	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.002	0.011	0.013	0.013	<0.001	<0.001
BIOFA007	1302_BIOAFA339_231018	18/10/2023	ES2337477	Fish	Normal	Milkfish (Chanos chanos)	1	45	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.006	0.007	0.007	<0.001	<0.001
BIOFA007	1302_BIOAFA340_231018	18/10/2023	ES2337477	Fish	Normal	Milkfish (Chanos chanos)	1	39	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.003	0.004	0.004	<0.001	<0.001
BIOFA007	1302_BIOAFA341_231018	18/10/2023	ES2337477	Fish	Normal	Milkfish (Chanos chanos)	1	42	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.005	0.005	0.005	0.005	<0.001	<0.001
BIOFA007	1302_BIOAFA342_231018	18/10/2023	ES2337477	Fish	Normal	Tarpon (Megalops cyprinoides)	1	65	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.002	0.002	0.002	0.002	<0.001	<0.001
BIOFA007	1302_BIOAFA343_231018	18/10/2023	ES2337477	Fish	Normal	Tarpon (Megalops cyprinoides)	1	82	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.001	0.001	0.001	<0.001	<0.001
BIOFA007	1302_BIOAFA344_231018	18/10/2023	ES2337477	Fish	Normal	Tarpon (Megalops cyprinoides)	1	57	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.012	0.015	0.013	<0.001	0.002
BIOFA007	1302_BIOAFA345_231018	18/10/2023	ES2337477	Fish	Normal	Sea Mullet (Mugil cephalus)	1	56	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA007	1302_BIOAFA346_231018	18/10/2023	ES2337477	Fish	Normal	Sea Mullet (Mugil cephalus)	1	45	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA007	1302_BIOAFA347_231018	18/10/2023	ES2337477	Fish	Normal	Sea Mullet (Mugil cephalus)	1	40	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA016	1302_BIOAFA348_231017	17/10/2023	ES2337477	Invertebrate	Normal	Giant Mangrove Whelk (Terebralia palustris)	1	83	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.007	0.008	0.008	<0.001	<0.001
BIOFA016	1302_BIOAFA349_231017	17/10/2023	ES2337477	Invertebrate	Normal	Giant Mangrove Whelk (Terebralia palustris)	1	71	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.011	0.012	0.012	<0.001	<0.001
BIOFA016	1302_BIOAFA350_231017	17/10/2023	ES2337477	Invertebrate	Normal	Long Bum (Telescopium telescopium)	1	47	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.015	0.026	0.016	0.009	0.001
BIOFA016	1302_BIOAFA351_231017	17/10/2023	ES2337477	Invertebrate	Normal	Long Bum (Telescopium telescopium)	1	51	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.002	0.014	0.02	0.016	0.004	<0.001
BIOFA016	1302_BIOAFA352_231017	17/10/2023	ES2337477	Invertebrate	Normal	Long Bum (Telescopium telescopium)	1	55	<0.002	<0.002	0.005	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.017	0.03	0.018	0.007	<0.001
BIOFA018	1302_BIOAFA315_231017	17/10/2023	ES2337477	Fish	Normal	King Salmon (Polydactylus macrochir)	1	162	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.002	0.003	0.003	<0.001	<0.001
BIOFA018	1302_BIOAFA316_231017	17/10/2023	ES2337477	Fish	Normal	King Salmon (Polydactylus macrochir)	1	81.5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA018	1302_QC149_231017	17/10/2023	ES2337477	Fish	Field_D	King Salmon (Polydactylus macrochir)	1	59.8	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.001	0.002	0.002	<0.001	<0.001
BIOFA018	1302_QC202_231017	17/10/2023	RN1417767	Fish	Interlab_D	King Salmon (Polydactylus macrochir)	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.005	<0.0005	<0.001	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	0.0009	<0.0001	<0.0003
BIOFA018	1302_BIOAFA317_231017	17/10/2023	ES2337477	Fish	Normal	Barramundi (Lates calcarifer)	1	78.6	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	0.001	0.001	0.001	<0.001	<0.001
BIOFA018	1302_QC150_231017	17/10/2023	ES2337477	Fish	Field_D	Barramundi (Lates calcarifer)	1	50.8	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	0.001	0.001	0.001	<0.001	<0.001
BIOFA018	1302_BIOAFA318_231017	17/10/2023	ES2337477	Fish	Normal	Barramundi (Lates calcarifer)	1	66.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA018	1302_QC151_231017	17/10/2023	ES2337477	Fish	Field_D	Barramundi (Lates calcarifer)	1	65.7	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA018	1302_BIOAFA319_231017	17/10/2023	ES2337477	Fish	Normal	Barramundi (Lates calcarifer)	1	55.6	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA018	1302_BIOAFA320_231017	17/10/2023	ES2337477	Fish	Normal	Barramundi (Lates calcarifer)	1	58.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA018	1302_BIOAFA321_231017	17/10/2023	ES2337477	Fish	Normal	Queenfish (Scomberoides commersonnianus)	1	71.6	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.001	0.002	0.002	<0.001	<0.001
BIOFA018	1302_BIOAFA322_231017	17/10/2023	ES2337477	Fish	Normal	Queenfish (Scomberoides commersonnianus)	1	46.8	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.01	0.011	0.011	<0.001	<0.001
BIOFA018	1302_BIOAFA323_231017	17/10/2023	ES2337477	Fish	Normal	Forktail Catfish 1 (Neoarius sp.1)	1	75.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.006	0.007	0.007	<0.001	<0.001
BIOFA018	1302_BIOAFA324_231017	17/10/2023	ES2337477	Fish	Normal	Sea Mullet (Mugil cephalus)	1	96.6	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	0.002	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.002	0.004	0.002	0.002	<0.001	<0.001
BIOFA018	1302_BIOAFA325_231017	17/10/2023	ES2337477	Fish	Normal	Sea Mullet (Mugil cephalus)	1	61.4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA018	1302_BIOAFA326_231017	17/10/2023	ES2337477	Fish	Normal	Sea Mullet (Mugil cephalus)	1	50.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA018	1302_BIOAFA327_231017	17/10/2023	ES2337477	Fish	Normal	Northern Whiting (Sillago sihama)	1	45.5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BIOFA018	1302_BIOAFA328_231017	17/10/2023	ES2337477	Crustacean	Normal	Sand Crab (Portunus pelagicus)	1	35	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.001	0.005	0.002	0.001	0.002
BIOFA018	1302_BIOAFA329_231017	17/10/2023	ES2337477	Crustacean	Normal	Sand Crab (Portunus pelagicus)	1	43.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	0.002	0.005	0.002	<0.001	0.003
BIOFA018	1302_BIOAFA330_231017	17/10/2023	ES2337477	Crustacean	Normal	Sand Crab (Portunus pelagicus)	1	46.4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.001	0.004	0.001	<0.001	<0.001	0.003
BIOFA024	1302_BIOAFA360_231025	25/10/2023	ES2337477	Crustacean	Normal	Redclaw Crayfish (Cherux quadricarinatus)	1	22.5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.006	0.018	0.036	0.024	0.001	0.011
BIOFA024	1302_BIOAFA361_231025	25/10/2023	ES2337477	Crustacean	Normal	Redclaw Crayfish (Cherux quadricarinatus)	1	21.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.013	0.046	0.075	0.059	<0.001	0.015
BIOFA024	1302_BIOAFA362_231025	25/10/2023	ES2337477	Crustacean	Normal	Redclaw Crayfish (Cherux quadricarinatus)	1	23.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	0.004	0.003	0.012	0.024	0.015	<0.001	0.005
BIOFA026	1302_BIOAFA356_231025	25/10/2023	ES2337477	Crustacean	Normal	Redclaw Crayfish (Cherux quadricarinatus)	1	26.9	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.007	0.034	0.054	0.041	<0.001	0.012
BIOFA026	1302_BIOAFA357_231025	25/10/2023	ES2337477	Crustacean	Normal	Redclaw Crayfish (Cherux quadricarinatus)	1	32.7	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.007	0.036	0.051	0.043	<0.001	0.008
BIOFA026	1302_BIOAFA358_231025	25/10/2023	ES2337477	Crustacean	Normal	Redclaw Crayfish (Cherux quadricarinatus)	1	20.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	<0.001	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.001	0.003	0.017	0.027	0.02	<0.001	0.007
BIOFA026	1302_BIOAFA359_231025	25/10/2023	ES2

Table 2
Field Results
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Table 2 - Surface Water Field Results

Frequency	Location ID	Sampled Date	DO (mg/L)	EC (µS/cm)	TDS (calc) (mg/L)	pH	Redox (mV)	Redox corrected (mV)	Temp (°C)	Clarity	Flow	Water Colour	Odour	Sheen	Sample Method
Start of Wet Season and Mass-Flux	SW104	13/12/2023	2.67	76	45.6	5.37	46.7	246.7	28.8	Low	No flow	Brown	No odour	No sheen	Grab
	SW106	6/12/2023	3.67	40.2	24.12	7.06	48.9	248.9	26.2	Moderate	Low flow	Brown	No odour	No sheen	Grab
	SW108	14/12/2023	3.16	66.4	39.84	5.34	86	286.0	29.6	Moderate	-	Brown	No odour	No sheen	Grab
	SW109*	6/12/2023	-	-	-	-	-	-	-	-	High flow	-	-	-	Grab
	SW112	6/12/2023	-	-	-	-	-	-	-	-	Low flow	-	-	-	Grab
	SW113	6/12/2023	-	-	-	-	-	-	-	-	Moderate flow	-	-	-	Grab
	SW114	13/12/2023	3.66	105.4	63.24	6.98	2.6	202.6	29.1	Low	Low flow	Brown	No odour	No sheen	Grab
	SW115	6/12/2023	5.37	376.6	225.96	6.97	34.9	234.9	32.5	Moderate	-	Brown	No odour	No sheen	Grab
	SW120	6/12/2023	-	-		-	-	-	-	-	Low flow	-	-	-	Grab
	SW124	6/12/2023	6.05	580.27	348.162	7.86	78.2	278.2	31.2	Moderate	Moderate flow	Brown	No odour	No sheen	Grab
	SW125	6/12/2023	10.35	455.6	273.36	9.16	8.2	208.2	29.7	Moderate	Low flow	Brown	No odour	No sheen	Grab
	SW132	6/12/2023	3.67	40.2	24.12	7.06	48.9	248.9	26.2	High	Low flow	Light brown	No odour	No sheen	Grab
	SW133	6/12/2023	3.99	455.6	273.36	5.64	86.8	286.8	26.7	Low	Low flow	Brown	No odour	No sheen	Grab
	SW143	6/12/2023	5.38	233.9	140.34	7.2	73.8	273.8	30.2	Moderate	-	Brown	No odour	Organic Sheen	Grab
	SW156	14/12/2023	1.65	24.9	14.94	5.7	74.2	274.2	27.5	Low	No flow	Brown	No odour	No sheen	Grab
	SW160	14/12/2023	1.57	24.1	14.46	5.94	80.3	280.3	28.2	Low	Low flow	Brown	No odour	No sheen	Grab
	SW162	13/12/2023	2.76	11.6	6.96	6.05	65	265.0	26.1	Low	High flow	Brown	No odour	No sheen	Grab
	SW168	6/12/2023	4.83	105.7	63.42	5.71	58.3	258.3	32.5	Moderate	Low flow	Brown	No odour	No sheen	Grab
	SW170*	13/12/2023	2.9	33.6	20.16	5.84	71.5	271.5	26.4	Low	Low flow	Brown	No odour	No sheen	Grab
	SW178	13/12/2023	2	17.7	10.62	6.05	61.8	261.8	61.8	Low	Moderate flow	Brown	No odour	No sheen	Grab
	SW181	13/12/2023	1.97	9.5	5.7	5.82	62.4	262.4	26.7	Low	High flow	Brown	No odour	No sheen	Grab
	SW300*	13/12/2023	2.83	58.2	34.92	4.75	123.6	323.6	30.9	Low	Low	Brown	No odour	No sheen	Grab
	SW312	13/12/2023	2.01	16.9	10.14	5.61	37.8	237.8	26.9	Low	High flow	Brown	No odour	No sheen	Grab
January Mass-Flux	SW109	24/01/2024	113.6	85.7	51.42	7.6	56.6	256.6	27.4	Moderate	Moderate	Light brown	No odour	no sheen	Grab
	SW170	24/01/2024	74.9	52.3	31.38	6.8	93.3	293.3	26.9	Low	Low	Brown	No odour	no sheen	Grab
	SW300	24/01/2024	89.2	113.9	68.34	7.52	92.8	292.8	27.7	High	Low	Colourless	No odour	no sheen	Grab
	SW312	24/01/2024	80	62.1	37.26	7	86.6	286.6	26.8	Low	Low	Brown	No odour	no sheen	Grab
February Mass-Flux	SW109	15/02/2024	4.57	45.5	27.3	6.43	-	-	29.1	Low	High	Colourless	No odour	no sheen	Grab
	SW170	15/02/2024	4.15	49	29.4	5.81	-	-	30.3	Low	Low	Light brown	No odour	no sheen	Grab
	SW312	15/02/2024	5.67	30.4	18.24	7.96	-	-	33.5	Moderate	Low	Light brown	No odour	no sheen	Grab
	SW300	15/02/2024	4.1	53.1	31.86	6.91	-	-	29.8	High	Pooled	Colourless	No odour	no sheen	Grab
End of Wet Season and Mass-Flux	SW104	6/03/2024	3.5	88	52.8	5.43	137.5	337.5	30.5	High	Low	Colourless	No odour	No sheen	Grab
	SW106	6/03/2024	1.86	66.9	40.14	6.28	105	305	29.2	High	Moderate	Colourless	No odour	No sheen	Grab
	SW108	6/03/2024	1.68	63.4	38.04	5.82	119.5	319.5	29	Moderate	Moderate	Light brown	No odour	No sheen	Grab
	SW109	6/03/2024	3.32	102	61.2	6.98	91.1	291.1	28.4	High	High	Colourless	No odour	No sheen	Grab
	SW112	6/03/2024	5.16	240.4	144.24	6.16	127	327	29.9	High	Low	Colourless	No odour	No sheen	Grab
	SW113	6/03/2024	0.85	9761	5856.6	6.58	169.3	369.3	29.6	High	Moderate	Colourless	No odour	No sheen	Grab
	SW114	6/03/2024	3.49	70	42	6.48	120.7	320.7	30.7	High	Pooled	Colourless	No odour	No sheen	Grab
	SW115	6/03/2024	1.2	50.7	30.42	6.15	112.6	312.6	29.8	Moderate	Pooled	Light brown	No odour	No sheen	Grab
	SW120	6/03/2024	1.8	6433	3859.8	8.16	118.7	318.7	28.8	Moderate	Low	Light brown	No odour	No sheen	Grab
	SW124	6/03/2024	1.29	42836	25701.6	6.86	180.2	380.2	29.5	High	Moderate	Colourless	No odour	No sheen	Grab
	SW125	6/03/2024	1.84	321.1	192.66	8.5	100	300	30.8	High	Pooled	Colourless	No odour	No sheen	Grab
	SW132	6/03/2024	3	91.4	54.84	6.98	125.6	325.6	28.6	High	Low	Colourless	No odour	No sheen	Grab
	SW133	6/03/2024	2.52	86.6	51.96	6.67	124.9	324.9	29.2	High	Moderate	Colourless	No odour	No sheen	Grab
	SW143	6/03/2024	2.12	873	523.8	6.85	145.6	345.6	29.6	Moderate	Low	Light brown	No odour	No sheen	Grab
	SW152	6/03/2024	1.44	89.2	53.52	6.16	126.5	326.5	28.4	Moderate	Low	Light brown	No odour	Organic sheen	Grab
	SW160	6/03/2024	0.53	62.6	37.56	6.09	98	298	29.3	High	Low	Colourless	No odour	No sheen	Grab
	SW162	6/03/2024	1.37	51.2	30.72	6.01	131.1	331.1	28.2	Moderate	Low	Light brown	No odour	Organic sheen	Grab
	SW168	6/03/2024	4.43	83.9	50.34	5.38	133.2	333.2	31.2	High	Low	Colourless	No odour	No sheen	Grab
	SW170*	6/03/2024	1.42	87.2	52.32	5.87	131.7	331.7	28.7	Low	Low	Brown	No odour	Organic sheen	Grab
	SW178	6/03/2024	1.46	42.4	25.44	6.79	123.5	323.5	28	Low	Low	Brown	No odour	No sheen	Grab
	SW181	6/03/2024	1.47	100.9	60.54	6.13	138.1	338.1	28.1	High	Low	Colourless	No odour	No sheen	Grab
	SW300*	6/03/2024	1.49	151.3	90.78	7.44	94.9	294.9	29.8	High	Low	Colourless	No odour	No sheen	Grab
	SW312*	6/03/2024	1.48	27.6	16.56	6.73	148.4	348.4	29	High	Pooled	Colourless	No odour	No sheen	Grab
April Mass-Flux	SW109	30/04/2024	2.48	49.3	29.58	5.81	157.6	357.6	28.9	High	Moderate	Colourless	No odour	No sheen	Grab
	SW170	30/04/2024	-	83.6	50.16	4.82	172.4	372.4	28.4	High	Pooled	Colourless	No odour	No sheen	Grab

Notes:
* - Location both in start/end of wet season event and mass flux
Parameters failed to save for December locations, SW109, SW112 and SW113 due to electronic logging failure
February mass flux redox measurements were unable to be collected accurately due to a water quality meter malfunction.
SW156 presented dry in March 2024
SW300 and SW312 presented dry in April 2024
mg/L: milligram per Litre
µS/cm: microsiemens per centimetre
mV: millivolts
°C: degrees celcius

Appendix B- Table 3
Surface Water Analytical Results
PFAS Ongoing Monitoring Plan
Department of Defence- RAAF Base Darwin

Table 3 - Surface Water Analytical Results

						PFAS Full Suite																														
						10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFAS	Sum of PFHxS and PFOS	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorohexane sulfonic acid (PFHxS)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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						0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																																	*0.00023**	*19*	
PFAS NEMP 2020 Recreational Water																															2			10	
	Location Code	**Sampled Date**	**Field ID**	**Lab Report Number**	**Sample Type**																															
December 2023 - Start of wet season and mass flux surface water	SW104	13/12/2023	1302_SW104_231213	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.56	0.44	*0.22*	<0.01	0.22
	SW106	6/12/2023	1302_SW106_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06	*0.04*	<0.01	0.02
	SW108	14/12/2023	1302_SW108_231214	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.08	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	1.23	1	*0.55*	0.02	0.45
	SW109	6/12/2023	1302_SW109_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.12	<0.02	<0.02	0.08	0.03	<0.05	<0.02	<0.02	1.77	1.42	*0.82*	0.03	0.6
	SW112	6/12/2023	1302_SW112_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37	0.33	*0.19*	0.01	0.14
	SW113	6/12/2023	1302_SW113_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06	*0.04*	<0.01	0.02
	SW114	13/12/2023	1302_SW114_231213	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01	*<0.01**	<0.01	<0.01
	SW115	6/12/2023	1302_SW115_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	<0.01	*<0.01**	0.01	<0.01
	SW120	6/12/2023	1302_SW120_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.02	0.05	<0.05	<0.02	<0.02	0.63	0.48	*0.29*	0.01	0.19
	SW124	6/12/2023	1302_SW124_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01	*<0.01**	<0.01	<0.01
	SW125	6/12/2023	1302_SW125_231206	ES2342430	Normal	<0.05	<0.05	0.19	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	<0.1	<0.02	<0.02	<0.02	0.02	0.04	0.15	<0.02	<0.02	0.07	0.08	<0.05	<0.02	<0.02	1.87	1.24	*0.71*	0.03	0.53
	SW132	6/12/2023	1302_SW132_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01	*0.01*	<0.01	<0.01
	SW133	6/12/2023	1302_SW133_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04	*0.02*	<0.01	0.02
	SW133	6/12/2023	1302_QC100_231206	ES2342430	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04	*0.02*	<0.01	0.02
	SW133	6/12/2023	1302_QC200_231206	RN1414076	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-	-	*0.021*	<0.01	0.017
	SW143	6/12/2023	1302_SW143_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	0.15	0.09	*0.07*	<0.01	0.02
	SW152	14/12/2023	1302_SW152_231214	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12	0.12	*0.12*	<0.01	<0.01
	SW152	14/12/2023	1302_QC101_231214	ES2343471	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12	0.12	*0.12*	<0.01	<0.01
	SW152	14/12/2023	1302_QC201_231214	RN1415793	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-	-	*0.11*	<0.01	<0.01
	SW156	14/12/2023	1302_SW156_231214	ES2343471	Normal	<0.05	<0.05	<0.05	0.09	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.1	0.02	0.03	<0.02	<0.02	<0.02	0.05	0.02	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	0.86	0.58	*0.51*	0.03	0.07
	SW160	14/12/2023	1302_SW160_231214	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08	0.08	*0.06*	<0.01	0.02
	SW162	13/12/2023	1302_SW162_231213	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01	*0.01*	<0.01	<0.01
	SW168	6/12/2023	1302_SW168_231206	ES2342430	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.1	<0.02	<0.02	<0.02	0.04	0.02	0.13	<0.02	<0.02	0.08	0.02	<0.05	<0.02	<0.02	2.12	1.72	*1.06*	0.05	0.66
	SW170	13/12/2023	1302_SW170_231213	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.07	*0.07*	<0.01	<0.01
	SW178	13/12/2023	1302_SW178_231213	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01	*<0.01**	<0.01	<0.01
	SW181	13/12/2023	1302_SW181_231213	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12	0.12	*0.12*	<0.01	<0.01
	SW285	13/12/2023	1302_QC100_231213	ES2343471	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.07	*0.04*	<0.01	0.03
	SW285	13/12/2023	1302_QC200_231213	RN1415182	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-	-	*0.032*	<0.01	0.03
	SW300	13/12/2023	1302_SW300_231213	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05	*0.04*	<0.01	0.01
	SW312	13/12/2023	1302_SW312_231213	ES2343471	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.1	0.1	*0.1*	<0.01	<0.01
January 2024 - Mass flux surface water	SW109	24/01/2024	1302_SW109_240124	ES2402439	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.32	0.32	*0.21*	<0.01	0.11
	SW170	24/01/2024	1302_SW170_240124	ES2402439	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05	*0.05*	<0.01	<0.01
	SW300	24/01/2024	1302_SW300_240124	ES2402439	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01	*<0.01**	<0.01	<0.01
	SW312	24/01/2024	1302_SW312_240124	ES2402439	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04	*0.04*	<0.01	<0.01
	SW312	24/01/2024	1302_QC100_240124	ES2402439	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04	*0.04*	<0.01	<0.01
	SW312	24/01/2024	1302_QC200_240124	RN1417898	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-	-	*0.029*	<0.01	<0.01
February 2024 - Mass flux surface water	SW109	15/02/2024	1302_SW109_2401215	ES2404842	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.4	0.38	*0.26*	<0.01	0.12
	SW170	15/02/2024	1302_SW170_240215	ES2404842	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.94	0.8	*0.54*	0.02	0.26
	SW170	15/02/2024	1302_QC100_240215	ES2404842	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	1.09	0.94	*0.66*	0.02	0.28
	SW170	15/02/2024	1302_QC200_240215	RN1420031	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.022	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.049	<0.01	<0.01	0.019	<0.02	<0.02	<0.02	<0.01	-	-	*0.53*	<0.01	0.26
	SW300	15/02/2024	1302_SW300_240215	ES2404842	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	<0.1	<0.02	<0.02	<0.02	0.02	0.16	0.26	0.03	<0.02	0.09	0.15	<0.05	<0.02	<0.02	2.23	1.26	*0.82*	0.18	0.44
	SW312	15/02/2024	1302_SW312_240215	ES2404842	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.47	0.44	*0.38*	<0.01	0.06
March - End of wet season and mass flux surface water	SW104	6/03/2024	1302_SW104_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	<0.1	<0.02	<0.02	<0.02	0.06	0.02	0.2	<0.02	<0.02	0.12	0.04	<0.05	<0.02	<0.02	3.38	2.78	*1.78*	0.05	1
	SW106	6/03/2024	1302_SW106_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.67	0.58	*0.4*	0.01	0.18
	SW108	6/03/2024	1302_SW108_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.59	0.52	*0.36*	0.01	0.16
	SW109	6/03/2024	1302_SW109_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.65	0.56	*0.38*	0.01	0.18
	SW112	6/03/2024	1302_SW112_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.66	0.57	*0.39*	0.01	0.18
	SW113	6/03/2024	1302_SW113_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.35	0.33	*0.23*	<0.01	0.1
	SW114	6/03/2024	1302_SW114_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	<0.1	<0.02	<0.02	<0.02	0.08	0.04	0.28	<0.02	<0.02	0.15	0.06	<0.05	<0.02	<0.02	4.56	3.74	*2.54*	0.07	1.2
	SW114	6/03/2024	1302_QC102_240306	ES2407639	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	<0.1	<0.02	<0.02	<0.02	0.08	0.03	0.25	<0.02	<0.02	0.14	0.06	<0.05	<0.02	<0.02	4.35	3.59	*2.35*	0.07	1.24
	SW114	6/03/2024	1302_QC202_240306	RN1422105	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.12	<0.05	<0.01	<0.01	<0.01	0.043	0.021	0.21	<0.01	<0.01	0.11	0.048	<0.02	<0.02	<0.01	-	-	*1.3*	0.051	1.1
	SW115	6/03/2024	1302_SW115_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01	*<0.01**	<0.01	<0.01
	SW120	6/03/2024	1302_SW120_240306	ES2407639	Normal	<0.05	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.1	<0.02	<0.02	<0.02	0.03	0.13	<0.02	<0.02	<0.02	0.04	0.08	<0.05	<0.02	<0.02	1.33	0.95	*0.58*	0.02	0.37
	SW124	6/03/2024	1302_SW124_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04	*0.02*	<0.01	0.02
	SW125	6/03/2024	1302_SW125_240306	ES2407639	Normal	<0.05	<0.05	0.37	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	<0.1	<0.02	<0.02	<0.02	0.09	0.08	0.44	<0.02	<0.02	0.15	0.28	<0.05	<0.02	<0.02	5.36	3.74	*2.4*	0.09	1.34
	SW132	6/03/2024	1302_SW132_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.25	0.25	*0.18*	<0.01	0.07
	SW133	6/03/2024	1302_SW133_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.03	*0.02*	<0.01	0.01
	SW133	6/03/2024	1302_QC100_240306	ES2407639	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01	*0.01*	<0.01	<0.01
	SW133	6/03/2024	1302_QC200_240306	RN1422105	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-	-	*<0.02**	<0.01	<0.01
	SW143	6/03/2024	1302_SW143_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08	0.08	*0.06*	<0.01	0.02
	SW152	6/03/2024	1302_SW152_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.27	0.27	*0.21*	<0.01	0.06
	SW160	6/03/2024	1302_SW160_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.51	0.48	*0.32*	<0.01	0.16
	SW162	6/03/2024	1302_SW162_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06	*0.06*	<0.01	<0.01
	SW168	6/03/2024	1302_SW168_240306	ES2407639	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.1	<0.02	<0.02	<0.02	0.02	0.02	0.11	<0.02	<0.02	0.05	0.03	<0.05	<0.02	<0.02	1.26	0.95	*0.65*	0.04	0.3
	SW168	6/03/2024	1302_QC101_240306	ES2407639	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	<0.1	<0.02	<0.02	<0.02	0.02	0.03	0.11	<0.02	<0.02	0.05	0.03	<0.05	<0.02	<0.02	1.34	1	*0.66*	0.05	0.34
	SW168	6/03/2024	1302_QC201_240306	RN1422105	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.034	<0.05	<0.01	<0.01	<0.01	<0.01	0.015	0.078	<0.

Appendix B- Table 4
Groundwater Field Results
PFAS Ongoing Monitoring Plan
Department of Defence- RAAF Base Darwin

Table 4 - Groundwater Field Results

AECOM

Frequency	Location ID	Date	Depth to Water (mbTOC)	Well Depth (mbTOC)	TOC (mAHD)	Water Elevation (mAHD)	Condition of Gatic	DO (mg/L)	EC (µS/cm)	TDS (calc) (mg/L)	pH	Redox (mV)	Redox (corr) (mV	Temp (°C)	Water Colour	Odour	Sheen	Sample Method
Biannual	MW103	5/03/2024	2.923	12.38	19.55	16.63	Good	1.96	107.9	65	5.45	121.8	321.8	31.4	Colourless	No odour	No sheen	Hydrasleeve
	MW107	5/03/2024	3.946	15.17	21.94	18.00	Good	1.36	109.5	66	5.37	143.3	343.3	31.1	Colourless	No odour	No sheen	Hydrasleeve
	MW115	20/03/2024	3.040	14.84	32.41	29.37	Good	4.65	35.4	21	4.66	153.1	353.1	31.3	Colourless	No odour	No sheen	Hydrasleeve
	MW128	4/03/2024	-	-	11.39	-	Good	3.46	101.9	61	4.87	138	338	31.6	Colourless	No odour	No sheen	Hydrasleeve
	MW133	4/03/2024	4.693	15.24	30.90	26.21	Good	4.23	48.7	29	5.19	138.7	338.7	28.7	Colourless	No odour	No sheen	Hydrasleeve
	MW139	5/03/2024	2.221	16.19	28.55	26.33	Good	2.32	76.8	46	5.00	190.2	390.2	29.8	Colourless	No odour	No sheen	Hydrasleeve
	MW141	5/03/2024	4.405	16.63	30.10	25.69	Good	1.80	32.5	20	4.69	195.9	395.9	30.0	Colourless	No odour	No sheen	Hydrasleeve
	MW144	5/03/2024	6.981	16.30	30.69	23.71	Good	4.23	68.2	41	4.71	181.6	381.6	30.7	Colourless	No odour	No sheen	Hydrasleeve
	MW148	5/03/2024	2.456	11.82	12.16	9.70	Good	1.94	56.7	34	4.86	161.1	361.1	31.9	Colourless	No odour	No sheen	Hydrasleeve
	MW156	20/03/2024	1.421	11.87	23.04	21.62	Good	4.14	25.0	15	4.78	157.3	357.3	30.9	Colourless	No odour	No sheen	Hydrasleeve
	MW176	5/03/2024	3.011	12.02	18.74	15.73	Good	4.87	179.9	108	5.76	172.8	372.8	31.1	Brown	No odour	No sheen	Hydrasleeve
	MW180	5/03/2024	4.001	15.41	29.06	25.06	Good	5.28	89.5	54	5.22	165.8	365.8	33.3	Colourless	No odour	No sheen	Hydrasleeve
	MW185	5/03/2024	0.473	10.52	5.82	5.35	Good	1.93	483.7	290	5.39	166.4	366.4	30.9	Light brown	No odour	No sheen	Hydrasleeve
	MW190	5/03/2024	1.631	12.55	11.34	9.71	Good	1.65	88.2	53	5.17	158.9	358.9	33.0	Colourless	No odour	No sheen	Hydrasleeve
	MW191	5/03/2024	2.729	12.96	10.91	8.18	Good	3.88	110.5	66	5.11	158.9	358.9	32.8	Light brown	No odour	No sheen	Hydrasleeve
	MW194	5/03/2024	1.231	12.28	18.24	17.01	Good	1.58	68.3	41	4.90	163.2	363.2	31.8	Colourless	No odour	No sheen	Hydrasleeve
	MW195	5/03/2024	1.081	11.34	16.74	15.66	Good	2.25	60.3	36	5.12	156.2	356.2	31.7	Colourless	No odour	No sheen	Hydrasleeve
	MW197	20/03/2024	3.612	15.79	NA	-	Good	4.95	72.6	44	4.68	141.3	341.3	30.2	Colourless	No odour	No sheen	Hydrasleeve
	MW200	5/03/2024	4.199	11.91	26.23	22.03	Good	2.23	79.3	48	5.05	155	355	30.8	Light brown	No odour	No sheen	Hydrasleeve
	MW205	20/03/2024	2.630	15.24	29.57	26.94	Good	4.23	18.2	11	5.09	143.2	343.2	31.7	Colourless	No odour	No sheen	Hydrasleeve
	MW209	5/03/2024	0.959	11.46	6.97	6.01	Good	1.91	1622.0	973	5.22	179.2	379.2	31.4	Brown	No odour	No sheen	Hydrasleeve
	MW210	5/03/2024	1.919	11.52	6.91	4.99	Good	0.97	143.3	86	5.18	161.7	361.7	32.8	Colourless	No odour	No sheen	Hydrasleeve
	MW211	5/03/2024	4.212	15.22	22.51	18.30	Good	2.08	2.1	1	5.56	163.8	363.8	31.4	Colourless	No odour	No sheen	Hydrasleeve
	MW215	5/03/2024	5.229	15.47	NA	-	Good	1.56	100.6	60	5.56	144.1	344.1	30.5	Brown	No odour	No sheen	Hydrasleeve
	MW240	5/03/2024	2.061	14.96	NA	-	Good	3.70	94.0	56	4.93	161.3	361.3	32.0	Colourless	No odour	No sheen	Hydrasleeve
	MW241	4/03/2024	4.071	15.60	NA	-	Good	2.59	80.7	48	4.71	155.7	355.7	31.8	Colourless	Hydrocarbon odour	No sheen	Hydrasleeve
	MW297	5/03/2024	6.434	15.91	29.53	23.10	Good	0.95	174.6	105	6.28	13.6	213.6	31.5	Colourless	Hydrocarbon odour	No sheen	Hydrasleeve
	MW303	5/03/2024	2.738	14.38	31.94	29.20	Good	2.36	83.8	50	5.34	180.8	380.8	31.3	Colourless	No odour	No sheen	Hydrasleeve
	MW451	5/03/2024	3.025	-	12.98	9.95	Good	2.20	91.7	55	6.33	113.5	313.5	31.1	Colourless	No odour	No sheen	Hydrasleeve
	MW452	5/03/2024	2.101	13.68	11.39	9.29	Good	2.05	126.4	76	5.74	132.2	332.2	31.6	Colourless	No odour	No sheen	Hydrasleeve
	MW453	20/03/2024	1.615	15.63	NA	-	Good	4.98	36.8	22	5.19	140	340	31.5	Colourless	No odour	No sheen	Hydrasleeve
	MW454	5/03/2024	1.156	12.94	26.27	25.11	Good	4.51	79.7	48	4.99	181.2	381.2	31.2	Light brown	No odour	No sheen	Hydrasleeve
	MW502	4/03/2024	2.571	14.77	-	-	Good	2.12	99.2	60	5.16	171.1	371.1	32.3	Colourless	No odour	No sheen	Hydrasleeve

Notes:
* MW502 replaced decomissioned well MW422 - no survey data
mbTOC: metres below top of casing
mAHD: metres Australia Height Datum
ND: not detected
NM: not measured
mg/L: milligram per Litre
µS/cm: microsiemens per centimetre
mV: millivolts
°C: degrees celcius

Table 4
Groundwater Analytical Results
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Groundwater Analytical Results

AECOM

							PFAS Full Suite																																
							10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctadecanoic Acid (PFODA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropalmitic acid (PFHxDA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFAS	Sum of PFHxS and PFOS	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorohexane sulfonic acid (PFHxS)
							µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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							0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.05	0.02	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2020 Drinking Water																																		**0.07**			**0.56**	
PFAS NEMP 2020 Freshwater 99%																																			*0.00023*	*19*	
Location Code	**Sample Date**	**Field ID**	**Lab Report**	**Sample Type**																																		
MW103	5/03/2024	1302_MW103_240305	ES2407635	Primary	<0.05	<0.05	2.13	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.2	<0.02	<0.02	<0.02	0.17	0.2	1.07	<0.02	-	<0.02	-	0.25	0.88	<0.05	<0.02	<0.02	14.5	**9.26**	*6.48*	0.2	2.78
MW107	5/03/2024	1302_MW107_240305	ES2407635	Primary	<0.05	<0.05	1.4	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.2	<0.02	<0.02	<0.02	0.13	0.14	0.74	<0.02	-	<0.02	-	0.17	0.7	<0.05	<0.02	<0.02	9.98	**6.24**	*4.51*	0.13	1.73
MW115	20/03/2024	1302_MW115_240320	ES2409473	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.38	0.3	0.04	<0.02	<0.02	1.85	0.36	3.06	<0.02	-	0.05	-	2.01	0.5	<0.05	<0.02	<0.02	77.6	**66.9**	*51*	**1.2**	15.9
MW128	4/03/2024	1302_MW128_240304	ES2407635	Primary	<0.05	<0.05	0.35	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	<0.1	<0.02	<0.02	<0.02	0.11	0.06	0.4	<0.02	-	<0.02	-	0.16	0.18	<0.05	<0.02	<0.02	6.24	**4.73**	*3.17*	0.11	1.56
MW133	4/03/2024	1302_MW133_240304	ES2407635	Primary	<0.05	<0.05	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.44	0.1	0.08	<0.02	<0.02	1.19	0.22	2.19	<0.02	-	0.07	-	0.68	0.38	<0.05	<0.02	<0.02	49.6	**43.5**	*37.4*	**0.66**	6.1
MW139	5/03/2024	1302_MW139_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.3	0.3	*0.21*	<0.01	0.09
MW141	5/03/2024	1302_MW141_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.3	0.3	*0.15*	<0.01	0.15
MW144	5/03/2024	1302_MW144_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.11	<0.02	-	<0.02	-	0.1	0.02	<0.05	<0.02	<0.02	2.36	**1.94**	*1.14*	0.04	0.8
MW144	5/03/2024	1302_QC101_240305	ES2407635	Intra-lab Duplicate	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.1	<0.02	-	<0.02	-	0.1	0.02	<0.05	<0.02	<0.02	2.14	**1.75**	*1.02*	0.03	0.73
MW144	5/03/2024	1302_QC201_240305	RN1422100	Inter-lab Duplicate	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.077	<0.05	<0.01	<0.01	<0.01	0.021	<0.01	0.088	<0.01	<0.05	<0.01	<0.02	0.066	<0.02	<0.02	<0.02	<0.01	1.76	**1.48**	*0.8*	0.027	0.68
MW148	5/03/2024	1302_MW148_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	<0.1	<0.02	<0.02	<0.02	0.13	0.04	0.22	<0.02	-	<0.02	-	0.17	0.04	<0.05	<0.02	<0.02	5.85	**5.03**	*3.38*	0.09	1.65
MW156	20/03/2024	1302_MW156_240320	ES2409473	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	<0.1	<0.02	<0.02	<0.02	0.16	0.06	0.51	<0.02	-	<0.02	-	0.26	0.1	<0.05	<0.02	<0.02	10.4	**8.91**	*6.55*	0.13	2.36
MW156	20/03/2024	1302_QC100_240320	ES2409473	Intra-lab Duplicate	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	<0.1	<0.02	<0.02	<0.02	0.17	0.06	0.52	<0.02	-	<0.02	-	0.27	0.1	<0.05	<0.02	<0.02	9.92	**8.43**	*5.99*	0.13	2.44
MW156	20/03/2024	1302_QC200_240320	RN1424007	Inter-lab Duplicate	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.17	0.053	<0.01	<0.01	<0.01	0.079	0.032	0.35	<0.01	<0.05	<0.01	<0.02	0.17	0.073	<0.02	<0.02	<0.01	4.71	**3.7**	*2.6*	0.079	1.1
MW176	5/03/2024	1302_MW176_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	**0.11**	*0.07*	<0.01	0.04
MW180	5/03/2024	1302_MW180_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.28	**0.08**	*0.01*	<0.01	0.07
MW185	5/03/2024	1302_MW185_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.1	**0.1**	*0.03*	<0.01	0.07
MW190	5/03/2024	1302_MW190_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.3	**0.3**	*0.21*	<0.01	0.09
MW191	5/03/2024	1302_MW191_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	-	<0.02	-	0.04	1.11	<0.05	<0.02	<0.02	2.75	**1.46**	*0.98*	0.03	0.48
MW194	5/03/2024	1302_MW194_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.15	<0.02	-	<0.02	-	0.08	0.03	<0.05	<0.02	<0.02	3.11	**2.68**	*1.95*	0.05	0.73
MW195	5/03/2024	1302_MW195_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.63	**0.6**	*0.41*	<0.01	0.19
MW195	5/03/2024	1302_QC100_240305	ES2407635	Intra-lab Duplicate	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	-	<0.02	-	0.02	<0.02	<0.05	<0.02	<0.02	0.61	**0.56**	*0.38*	<0.01	0.18
MW195	5/03/2024	1302_QC200_240305	RN1422100	Inter-lab Duplicate	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.05	<0.01	<0.02	0.013	<0.02	<0.02	<0.02	<0.01	0.54	**0.5**	*0.33*	<0.01	0.17
MW197	19/03/2024	1302_MW197_240319	ES2409473	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	<0.1	<0.02	<0.02	<0.02	0.08	0.03	0.27	<0.02	-	<0.02	-	0.1	0.05	<0.05	<0.02	<0.02	6.37	**5.69**	*4.34*	0.08	1.35
MW200	5/03/2024	1302_MW200_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	-	<0.02	-	0.02	<0.02	<0.05	<0.02	<0.02	0.54	**0.5**	*0.3*	<0.01	0.2
MW205	20/03/2024	1302_MW205_240320	ES2409473	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.09	<0.02	-	<0.02	-	0.06	<0.02	<0.05	<0.02	<0.02	1.65	**1.39**	*0.92*	0.02	0.47
MW209	5/03/2024	1302_MW209_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01*	<0.01	<0.01
MW210	5/03/2024	1302_MW210_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.08	<0.02	-	<0.02	-	0.06	0.02	<0.05	<0.02	<0.02	2.28	**1.99**	*1.43*	0.03	0.56
MW211	5/03/2024	1302_MW211_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.08	**0.08**	*0.05*	<0.01	0.03
MW215	5/03/2024	1302_MW215_240305	ES2407635	Primary	<0.05	<0.05	1.95	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.2	<0.02	<0.02	<0.02	0.11	0.13	0.69	<0.02	-	<0.02	-	0.14	0.84	<0.05	<0.02	<0.02	8.66	**4.38**	*2.96*	0.08	1.42
MW240	4/03/2024	1302_MW240_240304	ES2407635	Primary	<0.05	<0.05	0.21	1.8	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.75	1.2	0.05	0.15	<0.02	0.46	2.22	3.5	0.68	-	0.05	-	0.72	1.84	<0.05	<0.02	<0.02	35.7	**19.6**	*14.4*	**2.44**	5.24
MW241	5/03/2024	1302_MW241_240305	ES2407635	Primary	<0.05	<0.05	0.21	0.99	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.72	0.9	<0.02	0.07	<0.02	0.41	2	2.78	0.59	-	<0.02	-	0.6	1.51	<0.05	<0.02	<0.02	32.6	**19.6**	*15.2*	**2.23**	4.36
MW297	4/03/2024	1302_MW297_240304	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	-	<0.02	-	0.03	<0.02	<0.05	<0.02	<0.02	1.56	**1.42**	*1.06*	0.02	0.36
MW303	5/03/2024	1302_MW303_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.11	0.6	<0.02	<0.02	<0.02	1.47	0.58	5.66	<0.02	-	<0.02	-	2.77	0.98	<0.05	<0.02	<0.02	53.6	**38.2**	*19*	**1.23**	19.2
MW303	5/03/2024	1302_QC102_240305	ES2407635	Intra-lab Duplicate	<0.05	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.98	0.5	<0.02	<0.02	<0.02	1.3	0.58	4.7	<0.02	-	<0.02	-	2.84	0.9	<0.05	<0.02	<0.02	52.5	**38.4**	*18.9*	**1.2**	19.5
MW303	5/03/2024	1302_QC202_240305	RN1422100	Inter-lab Duplicate	<0.01	<0.01	0.042	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	1.8	0.59	<0.01	<0.01	<0.01	0.85	0.43	3.1	<0.01	<0.05	<0.01	<0.02	1.8	0.76	<0.02	<0.02	<0.01	35.28	**25**	*13*	**0.91**	12
MW422	5/03/2024	1302_MW422_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.1	<0.02	<0.02	<0.02	0.21	0.09	0.73	<0.02	-	<0.02	-	0.43	0.18	<0.05	<0.02	<0.02	9.29	**6.96**	*4.28*	0.16	2.68
MW451	5/03/2024	1302_MW451_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.02	<0.05	<0.02	<0.02	0.13	**0.13**	*0.1*	<0.01	0.03
MW452	5/03/2024	1302_MW452_240305	ES2407635	Primary	<0.05	<0.05	0.1	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	<0.1	<0.02	<0.02	<0.02	0.08	0.05	0.28	<0.02	-	<0.02	-	0.14	0.18	<0.05	<0.02	<0.02	3.91	**2.94**	*1.74*	0.06	1.2
MW453	19/03/2024	1302_MW453_240319	ES2409473	Primary	<0.05	<0.05	0.28	0.15	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.91	1.3	<0.02	<0.02	<0.02	0.26	2.64	4.3	0.32	-	<0.02	-	0.88	1.86	<0.05	<0.02	<0.02	25.6	**10.2**	*5.47*	**2.5**	4.75
MW454	5/03/2024	1302_MW454_240305	ES2407635	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.24	0.2	<0.02	<0.02	<0.02	0.69	0.23	2.1	<0.02	-	<0.02	-	1.63	0.46	<0.05	<0.02	<0.02	34.4	**27.4**	*16.5*	0.5	10.9

Notes:

µg/L: micrograms per litre

LOR: limit of reporting

* LOR is above guideline value

D R A F T

Appendix C

Sampling Logs

AECOM

ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	OMP / WQMP	**Project Number:**	60612561 [redacted]
Project Location:	RAAF Base Darwin	**Client:**	DoD [redacted]
Date of Fieldwork:	6/12/2023	**PM Name:**	[redacted]
Time Arrive:		**Time Depart:**	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

0 6:30 mobilisation
0 8:15 Sampled SW133.1 SW132
0 QC100 & QC200 taken at SW133.
- 29. - SW143.
- 00cm - SW124
9.35 - SW125.
9.50 - SW113.
10:10 - SW112.
10:40 - SW114 unable to sample due to it being dry
11:00 - SW104 no water - cant sample
11:15 - SW115 collected
11:31 - SW106 collected
11:51 - SW274 dry
12:13 - SW165 collected
13:10 - SW109 & SW286 - WQMP QC100+200+500 completed QC300, QC400 & QC500 for OMP 1300
completed QC 300 QC400 & QC55 for WQMP 1230
- SW285 (WQMP) dry.
0 On base & signed keys out 5.15.
0 SW162 dry & SW271
= SW272 dry) - SW177 dry - SW178 dry.
- SW270 dry. - SW312 dry.
0 Remainder sites dry
0 Dropped S.F off & filled up.

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

0 Contaminants 0 Dehydration
0 Fauna & Flora
0 Public
0 Dogs

Approval and Distribution

[redacted] 6/12/23

Work Staff Signature Date

Distribution: [redacted] File

ANZ

FQM - Daily Activity Report

AECOM

Q4AN(EV)-002-FM1

Project Name:	DWN OMP	**Project Number:**	
Project Location:	DWN RAF.	**Client:**	Ventia
Date of Fieldwork:	14.12.23 / 15.12.23	**PM Name:**	JG
Time Arrive:		**Time Depart:**	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

6.30 - toolbox - safety checks.
- checked SW27S dry.
- 7.30 got SW152 key
- 7.45 - SW152 sample
- 8.30 - SW160
- 9.30 - SW156 - long puddle new spot
- looked for puddles at SW27S.
- office - 10.30 - sorted QC's and COC's.
- 12.00 dropped @ lab
- looked for puddle @ SW27S dry.
- went back 17.30 dry.

15.12.23

5.30am go to SAMPLE @ SW27S

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

Approval and Distribution

[redacted] 15.12.23.

Signature Date

Distribution: Project Central File

ANZ

FQM - Daily Activity Report

AECOM

Q4AN(EV)-002-FM1

Project Name:	DWN OMP/WQMP DWN ROAF	**Project Number:**	
Project Location:		**Client:**	Ventia
Date of Fieldwork:	13.12.23	**PM Name:**	JG
Time Arrive:	6.45 am	**Time Depart:**	1400

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- 7.00 on road. Tool Box check on review SWMS.
- 7.30 SW285. QC100 + QC200 (wamp & omp) (omp LOB rep) (WSMP Audit)
- 8.45 SW273 wamp
- 10.00 SW200 omp. DRY
- 10.30 SW114 OMP.
- 10.40 SWamp walk to SW106 sampled
- 11.30 swamp walk to SW274 - fell in hole hurt knee - sampled.
- 11.50 waiting @ SW200 for water to come into drain.
- 12.15 out SW200
- LUNCH
- SW285 dry
- 1400 SW170.
- 1420 SW372
- 1430 SW210
- 1440 SW178
- 1450 SW181
- 1500 SW272
- 1530 SW162.
- 1600 - finished - up getting ice and packing ski

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

Approval and Distribution

[redacted]

ture 13.12.23.

Date

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FQM - Sample QAQC Tracking Sheet

Q4AN(EV)-011-FM1

Project Name:	OMP / WQMP	**Project Number:**	60612561 [redacted]
Project Location:	RAAF Rose Avn	**Client:**	DoD [redacted]
PM Name:	[redacted]	**Fieldwork Staff:**	[redacted]

	QAQC ID	Primary Sample ID	Sample Type	Batch Number
OMP	QC 100	intra	SW153	6/12
	QC 200	inter	SW153	6/12
	QC 101	intra		
	QC 201	inter		
	QC 102	intra		
	QC 202	inter		
WQMP	QC 100	intra	SW286	6/12
	QC 200	inter	SW286	6/12
	QC 300	Rinsate		6/12
OMP	QC 400	Field Blank		6/12
	QC 500	Trip Blank		6/12
WQMP	QC 300	Rinsate		6/12
	QC 400	Field Blank		6/12
	QC 500	Trip Blank		6/12

QAQC	Required		Frequency		Method Used
Field Duplicates	☑ Yes	☐ No	☐ 1 in 10	☐ 1 in 20	
Field Triplicates	☐ Yes	☐ No	☐ 1 in 10	☐ 1 in 20	
Rinsate Blanks	☑ Yes	☐ No	☐ 1 per matrix/equipment/day		
Field Blanks	☑ Yes	☐ No	☐ 1 per day		
Trip Blanks	☑ Yes	☐ No	☐ 1 per ice chest		
Trip Spikes	☐ Yes	☑ No	☐ 1 per ice chest		

Approval and Distribution

[redacted] Fieldwork Staff Signature — Date: 6/12/23

Project Manager Signature — Date

Distribution: Project Central File

AECOM

ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	REASOMP SW Mass Flux	**Project Number:**	60612561
Project Location:	Darwin	**Client:**	DoD
Date of Fieldwork:	24/01/24	**PM Name:**	[redacted]
Time Arrive:	10:30	**Time Depart:**	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QA/QC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Mobilisation to SW500 at 10:30
- SW109 @ 11:15
- SW312 @ 11:50
- SW170 @ 12:15
- Demobilisation to grab ice lunch & drop samples off at lab.

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

- General public
- Rain
- Motor vehicles

Approval and Distribution

[redacted] 24/01/24

Signature Date

Distribution: Project Central File

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FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:		Project Number:	
Project Location:		Client:	
Date of Fieldwork:	15-2-24	PM Name:	
Time Arrive:		Time Depart:	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- packed car of equip. 8:30am
- left Darwin office @ 9am to refuel
- 9:15am arrived @ SW30C
- 9:45am SW109
- SW109 = high flow, colourless, no odour, no sheen
- 10am heading to base to sign visitor in
- 10:30am Sampled SW312. No flow
- 10:45am sampled SW170. No flow, collected QC100 & QC200 here
- Signed off base, collected ice & dropped samples off,
- Back to office to decon equipment

HSE

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

- Motor vehicles
- Hydration - Humidity is high

Approval and Distribution

[redacted] Signature 15/02/24 Date

Distrib[redacted]

AECOM

ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFAS amp / w amp	**Project Number:**	60612561 / [redacted]
Project Location:	DWN	**Client:**	RAP
Date of Fieldwork:	4/3/24	**PM Name:**	[redacted]
Time Arrive:	7:15	**Time Depart:**	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Picked up Cars @ 07:00
- Gauged all amp sites / dropped HS on / off base.
- Collected MW318 MW358 MW412 MW167 ~~MW292~~ MW297 MW128 & MW133.
- Dropped keys off, & Cass off at 1730.
- MW292 still 'missing' / destroyed.
- MW133 & MW292 requires filtering at lab for ferrous b+1.
- QC100 taken @ MW363. QC101 & 201 @ MW297.

Health and Safety

Describe any HSE actions or observations or additional information that is not recorded in the HSEP

- Motor vechicles
- Dehydration
- Flora & fauna

Approval and Distribution

[redacted] 4/3/24

Signature Date

Distribution: Project Central File

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ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFAS amp / w amp	**Project Number:**	60612561 / [redacted]
Project Location:	DWN	**Client:**	RAP
Date of Fieldwork:	4/3/24	**PM Name:**	[redacted]
Time Arrive:	7:15	**Time Depart:**	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Picked up Cars @ 07:00
- Gauged all amp sites / dropped HS on / off base.
- Collected MW318 MW358 MW412 MW167 ~~MW292~~ MW297 MW128 & MW133.
- Dropped keys off, & Cass off at 1730.
- MW292 still 'missing' / destroyed.
- MW133 & MW292 requires filtering at lab for ferrous b+1.
- QC100 taken @ MW363. QC101 & 201 @ MW297.

Health and Safety

Describe any HSE actions or observations or additional information that is not recorded in the HSEP

- Motor vechicles
- Dehydration
- Flora & fauna

Approval and Distribution

[redacted] 4/3/24

Signature Date

Distribution: Project Central File

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ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFASoMP	Project Number:	60612561
Project Location:	DWN	Client:	DoD
Date of Fieldwork:	6/03/24	PM Name:	[redacted]
Time Arrive:	06:30	Time Depart:	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QA/QC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Signed on to Base with key. Sampled all SW but SW156 (No flow)
- No flow at SW170 or SW312 (mass flux). Flow reading @ 0.1 in middle culvert for SW300.
- QC100 & QC200 taken @ SW133.
- All SW collected but SW113. QC102 & QC202 taken @ SW114. QC101 & QC201 taken @ SW168.
- No flow readings @ SW302 or SW170.
- Sign off @ 1610.

HSE Log

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

- Motor vehicles
- Public
- Rain

Approval and Distribution

[redacted] rk Staff Signature — 6/03/24 Date

Distributio[redacted]ile

AECOM

ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFAS amp / w amp	**Project Number:**	60612561 / [redacted]
Project Location:	DWN	**Client:**	RAP
Date of Fieldwork:	4/3/24	**PM Name:**	[redacted]
Time Arrive:	7:15	**Time Depart:**	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Picked up Cars @ 07:00
- Gauged all amp sites / dropped HS on / off base.
- Collected MW318 MW358 MW412 MW167 ~~MW292~~ MW297 MW128 & MW133.
- Dropped keys off, & Cass off at 1730.
- MW292 still 'missing' / destroyed.
- MW133 & MW292 requires filtering at lab for ferrous b+1.
- QC100 taken @ MW363. QC101 & 201 @ MW297.

Health and Safety

Describe any HSE actions or observations or additional information that is not recorded in the HSEP

- Motor vechicles
- Dehydration
- Flora & fauna

Approval and Distribution

[redacted] 4/3/24

Signature Date

Distribution: Project Central File

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FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFASOMP/WQMP	Project Number:	60612561 [redacted]
Project Location:	DWN	Client:	DoD
Date of Fieldwork:	5/4/24	PM Name:	[redacted]
Time Arrive:	06:30	Time Depart:	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QA/QC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Finished collecting all WQMP sites. MW291 destroyed.
- Dropped them off to lab. Filled up Car.
- Collected OMP on & off base. Only have 6x left (4 air side + 2 on for end of base)
- QC(s) taken @ MW195. QC101 @ MW144. QC102 @ MW303.
- Needing to change date of MW195 to 5/3/24 (org. 4/3/24).

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

- Spiders
- Dehydration

Approval and Distribution

Fieldwork Staff Signature _____ Date _____

Distribution: Project Central File

AECOM

ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFAS Amp/wQMP	Project Number:	60612561 [redacted]
Project Location:	DWN	Client:	DoD
Date of Fieldwork:	5/4/24	PM Name:	[redacted]
Time Arrive:	06:30	Time Depart:	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QA/QC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Finished collecting all WQMP sites. MW291 destroyed.
- Dropped them off to lab. Filled up Car.
- Collected QMP on & off base. Only have 6+ left (4 air side + 2 on for end of base)
- QC(s) taken @ MW195. QC101 @ MW144. QC102 @ MW303.
- Needing to change date of MW195 to 5/3/24 (org. 4/3/24).

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

- Spiders
- Dehydration

Approval and Distribution

Fieldwork Staff Signature _____ Date _____

Distribution: Project Central File

AECOM

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FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFAS amp / w amp	**Project Number:**	60612561 / [redacted]
Project Location:	DWN	**Client:**	RAP
Date of Fieldwork:	4/3/24	**PM Name:**	[redacted]
Time Arrive:	7:15	**Time Depart:**	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Picked up Cars @ 07:00
- Gauged all amp sites / dropped HS on / off base.
- Collected MW318 MW358 MW412 MW167 ~~MW292~~ MW297 MW128 & MW133.
- Dropped keys off, & Cass off at 1730.
- MW292 still 'missing' / destroyed.
- MW133 & MW292 requires filtering at lab for ferrous b+1.
- QC100 taken @ MW363. QC101 & 201 @ MW297.

Health and Safety

Describe any HSE actions or observations or additional information that is not recorded in the HSEP

- Motor vechicles
- Dehydration
- Flora & fauna

Approval and Distribution

[redacted] 4/3/24

Signature Date

Distribution: Project Central File

ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFAS OMP	**Project Number:**	60612561
Project Location:	RAAF Base Darwin	**Client:**	Department of Defence
Date of Fieldwork:	19/03/24	**PM Name:**	[redacted]
Time Arrive:	11:00	**Time Depart:**	13:30
Administration			
Personnel On-Site:	[redacted]		
Contractors (Inducted, Downtime):			

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QA/QC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

Sign on - 11:00am

MW 115 - 11:20 - gauge & drop hydrasleeve

MW 205 - 11:44

MW 156 - 12:06

MW 453 - 1230 - Sample & replace hydrasleeve

MW 197 - 01300 - Sample

Sign out - 13:30

Mobilise to DWN office

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

Approval and Distribution

[redacted] 19/03/24

Date

Distribution: Project Central File

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FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFASOMP/WQMP	Project Number:	60612561 [redacted]
Project Location:	DWN	Client:	DoD
Date of Fieldwork:	5/4/24	PM Name:	[redacted]
Time Arrive:	06:30	Time Depart:	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QA/QC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Finished collecting all WQMP sites. MW291 destroyed.
- Dropped them off to lab. Filled up Car.
- Collected OMP on & off base. Only have 6x left (4 air side + 2 on for end of base)
- QC(s) taken @ MW195. QC101 @ MW144. QC102 @ MW303.
- Needing to change date of MW195 to 5/3/24 (org. 4/3/24).

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

- Spiders
- Dehydration

Approval and Distribution

Fieldwork Staff Signature _____ Date _____

Distribution: Project Central File

AECOM

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FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFAS OMP SW mass flux	**Project Number:**	60612561
Project Location:	RAAF Darwin	**Client:**	DoD
Date of Fieldwork:	30/04/24	**PM Name:**	[redacted]
Time Arrive:	12:45 pm	**Time Depart:**	12:30 pm

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QAQC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

☐ SW170
☐ SW312
☐ SW300
☐ SW109

12:30 - Mobilise to Base

12:45 - Sign onto base

13:15 - SW170 SWL: 0.95m TD

13:25 - SW312 - Dry

13:40 - Sign off Base

14:00 - SW109 SWL = 0.950 TD: 2.322 0.8 Flow QC 100/200

14:20 - SW300 - Dry

14:30 - Scan Samples into ALS Compass

14:45 - mobilise to ALS

15:00 - Drop samples to ALS

15:10 - mobilise to DWN office

HSE Actions

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

Approval and Distribution

AECOM

ANZ

FQM - Daily Activity Report

Q4AN(EV)-002-FM1

Project Name:	PFASoMP	Project Number:	60612561
Project Location:	DWN	Client:	DoD
Date of Fieldwork:	6/03/24	PM Name:	[redacted]
Time Arrive:	06:30	Time Depart:	

Administration

Personnel On-Site:	[redacted]
Contractors (Inducted, Downtime):	

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes ☐ Indicate QA/QC samples collected & note on tracking sheet

☐ Record number waste drums transported on & off-site ☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

- Signed on to Base with key. Sampled all SW but SW156 (No flow)
- No flow at SW170 or SW312 (mass flux). Flow reading @ 0.1 in middle culvert for SW300.
- QC100 & QC200 taken @ SW133.
- All SW collected but SW113. QC102 & QC202 taken @ SW114. QC101 & QC201 taken @ SW168.
- No flow readings @ SW302 or SW170.
- Sign off @ 1610.

HSE Log

Describe any HSE actions or oberservations or additional information that is not recorded in the HSEP

- Motor vehicles
- Public
- Rain

Approval and Distribution

[redacted] rk Staff Signature — 6/03/24 Date

Distributio[redacted]ile

ANZ

FQM - Daily Activity Report

AECOM

Q4AN(EV)-002-FM1

Project Name:	PFAS OMP	**Project Number:**	60612561
Project Location:	RAAF Base Pwn	**Client:**	DoD
Date of Fieldwork:	20/3/24	**PM Name:**	[redacted]
Time Arrive:	10:30	**Time Depart:**	12:15
Administration			
Personnel On-Site:			
Contractors (Inducted, Downtime):			

Tasks Undertaken

Describe tasks and time of activities undertaken, observations, communications with PM, clients and subcontractors etc.

☐ Cross out unused portions of the site notes
☐ Record number waste drums transported on & off-site
☐ Indicate QAQC samples collected & note on tracking sheet
☐ Indicate observations of on-Site environmental receptors

Indicate Weather Conditions:

10:30 - Sign on Base

10:45 MW115 - Sample Collected

MW205 -

MW156 - QC's collected from here

11:50 SW156 - dry, Sample not Collected

12:10 Sign out

12:15 pickup batteries for YSI

Return to DWN office

HSE Actions

Describe any HSE actions or observations or additional information that is not recorded in the HSEP

Approval and Distribution

[redacted]

20/3/24
Date

Distribution: Proje[redacted]

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FQM - NAPL and Groundwater Level Gauging Record

AECOM

Q4AN(EV)-414-FM1

Project Name:	DWN OMP [redacted]	**Project Location:**	DWN RAAP
Project Number:		**Client:**	
PM Name:		**Fieldwork Staff Name:**	[redacted]

Confirm NAPL and groundwater levels by repeat measurements. All columns must be completed. If NAPL is not present in a well write 'ND' (Not Detected) in the relevant column.

Field Data

Well ID	Date (dd/mm/yy)	Time (24hr:mm)	PID Reading (ppm)	Depth to NAPL (mBTOC)	Depth to Groundwater (mBTOC)	LNAPL Thickness (m)	Depth to DNAPL (mBTOC)	Total Well Depth (mBTOC)	DNAPL Thickness (m)	Comments (well condition, odour, NAPL colour and viscosity)
SW			W/A	DD	E	ORP	TEMP	NAD		
SW283	13.12		7.48	5.02	53.18	-21.8	30.4	2.3		(OMP, WQMP) Clear NO FLOW
SW278			2.40	3.78	135.9	-21.8	30.9	-0.3		(WQMP) Clear, low flow NO Hyt Oshean
SW114			6.90	3.66	105.4	2.6	29.1			OMP - very little water - evidence of past flow
SW104			5.37	2.67	76.0	46.7	28.8			OMP - NO flow NO clear NS
SW274			4.40	1.66	52.8	118.6	26.8	0.6		WQMP - Debris, clear, NO, NS
SW360			4.75	2.23	58.2	123.6	30.7			OMP - mostly, murky, NO NS
SW170			6.84	2.90	33.6	71.3	26.4	272.0		(OMP, WQMP) Turbid, HF, NS, NO
SW312			5.61	2.01	16.9	37.8	26.7			(OMP) Fast flow, Turbid, no smell
SW270			6.13	2.02	23.6	65.1	26.5	270.0		(WQMP) High flow turbid, NO, NS.
SW178			6.05	2.00	17.7	61.8	26.8			OMP HF, cloudy, NO, NS
SW181			5.82	1.97	9.5	62.4	26.7			OMP HF murky, NO NS.
SW272			5.94	2.78	44.8	65.3	25.8	665		WQMP, murky, low flow, NO, NS
SW162			6.05	2.76	11.6	65.0	26.1	59.7		OMP, WQMP, HF, MURKY, NO NS
SW152	14.1223	ok's	5.67	1.76	27.1	87.8	26.6			
SW160			5.94	1.57	24.1	80.3	28.2			OMP HF, MURKY, NO NS.
SW156			5.70	1.65	24.7	74.2	27.5			OMP, NF, murky, NO, NS.
SW275	15.12.23									OMP, middle Murky, NO, NS.
SW108	found.									

Measurement Equipment

Make & Model:		**Supplier:**	
Serial No.:		**Calibration Report Provided?**	

Notes/Comments

(PID) - photo ionisation detector; (ppm) - parts per million; (LNAPL) - light non-aqueous phase liquids; (DNAPL) - dense light non-aqueous phase liquid; (mBTOC) - metres below top of casing

Approval and Distribution

[redacted] 15.12.23

Signature Date

Project Manager Signature Date

Distribution: Project Central File

ANZ

FQM - NAPL and Groundwater Level Gauging Record

AECOM

Q4AN(EV)-414-FM1

Project Name:	PFASOMP / WQMP	**Project Location:**	Darwin	**PM Name:**	[redacted]
Project Number:	60612561 [redacted]	**Client:**	DoD	**Fieldwork Staff Name:**	

Confirm NAPL and groundwater levels by repeat measurements. All columns must be completed. If NAPL is not present in a well write 'ND' (Not Detected) in the relevant c

Field Data

Well ID	Date (dd/mm/yy)	Time (24hr:mm)	PID Reading HS (ppm)	Depth to LNAPL (mBTOC)	Depth to Groundwater (mBTOC)	LNAPL Thickness (m)	Depth to DNAPL (mBTOC)	Total Well Depth (mBTOC)	DNAPL Thickness (m)	Comments (well condition, odour, NAPL colour and viscosity)
OMP MW185	4/3/24	07:25	1.473		0.473m			10.519		GC
OMP MW191	4/3/24	07:30	2.729		2.729			12.961		GC
OMP MW190	4/3/24	07:39	3.631		1.631			12.554		GC
OMP MW195		07:45	2.081		1.061			11.341		GC, flooded
OMP MW194		07:55	2.321		1.321			12.275		GC
OMP MW210		08:15	2.919		1.919			11.522		GC
MW452		08:30	3.101		2.101			13.682		GC
MW148		08:40	3.456		2.456			11.822		GC
MW151		08:43	4.025		3.025			15.981		GC
MW209		08:55	1.959		0.959			11.455		GC, sediment up TOC
MW176		0905	5.00		3.011			12.019		GC, flooded up TOC
MW200		9:20	5.199		4.199			11.909		GC
MW211		9:30	5.212		~~5.215~~ 4.212			15.215		GC, missing bolts.
MW160		9:37	5.011		~~5.411~~ 4.001			15.411		GC
MW144		10:40	7.981		6.981			16.295		GC
MW141		10:15	5.405		4.405			16.825		GC stiff lid
MW139		10:20	3.221		2.221			16.694		GC, stiff lid
MW454		10:37	2.156		1.156			12.436		GC, missing bolt
MW133		11:40	—		4.695			15.243		GC, HC odour, NS
MW292		12:15	—		5.770			15.119		GC, HC NS

WQMP

Measurement Equipment

Make & Model:		**Supplier:**	
Serial No.:		**Calibration Report Provided?**	

Notes/Comments

(PID) - photo ionisation detector; (ppm) - parts per million; (LNAPL) - light non-aqueous phase liquids; (DNAPL) - dense light non-aqueous phase liquid; (mBTOC) - metres below top of casing

Approval and Distribution

[redacted] 4/3/24

Staff Signature Date

Project Manager Signature Date

Distribution: Project Central File

ANZ

FQM - NAPL and Groundwater Level Gauging Record

AECOM

Q4AN(EV)-414-FM1

Project Name:	OMP / WQMP	**Project Location:**	Dun	**PM Name:**	[redacted]
Project Number:	60612561 / 60719183	**Client:**	DoD	**Fieldwork Staff Name:**	

Confirm NAPL and groundwater levels by repeat measurements. All columns must be completed. If NAPL is not present in a well write 'ND' (Not Detected) in the relevant column.

Field Data

Well ID	Date (dd/mm/yy)	Time (24hr:mm)	~~PID Reading~~ (ppm)	Depth to LNAPL (mBTOC)	Depth to Groundwater (mBTOC)	LNAPL Thickness (m)	Depth to DNAPL (mBTOC)	Total Well Depth (mBTOC)	DNAPL Thickness (m)	Comments (well condition, odour, NAPL colour and viscosity)
OMP MW303	4/3/24	12:53	7.434		6.434			15.905		GC ~~Add~~
MW103	4/3/24	13:01	3.973		2.923			12.382		GC, missing bolt
MW245	4/3/24	13:25	6.229		5.229			15.470		GC
MW241	4/3/24	13:35	3.061		2.061			14.956		Fair c
MW240	4/3/24	13:45	3.571		2.571			14.769		Fair condition
MW453	4/3/24	14:00	3.4041		2.404			15.383		Fair condition
WQMP/OMP MW197	4/3/24	14:05	5.286		4.286			9.335		Rootlets on probe
OMP MW422	4/3/24	14:20	3.738		2.738			14.376		GC
OMP MW107	4/5/24		4.946		3.946			15.173		GC

Measurement Equipment

Make & Model:		**Supplier:**	
Serial No.:		**Calibration Report Provided?**	

Notes/Comments

(PID) - photo ionisation detector; (ppm) - parts per million; (LNAPL) - light non-aqueous phase liquids; (DNAPL) - dense light non-aqueous phase liquid; (mBTOC) - metres below top of casing

Approval and Distribution

[redacted] 4/3/24

Fieldwork Staff Signature Date

Project Manager Signature Date

Distribution: Project Central File

ANZ

FQM - Groundwater Sampling and Purging Record

AECOM

Q4AN(EV)-405-FM1

Project Name:	PFAS OMP	**Project Number:**	60612561	**PM Name:**	[redacted]	**Surface Water/Groundwater:**	Groundwater
Client:	DoD	**Project Location:**	RBD	**Fieldwork Staff:**		**Well Development or Well Sampling Event? (circle)**	

General Bore Information		Parameter Info.	Decontamination	Sampling Method	Hydrasleeve Info.	
Date of GW Level:	Bore Radius (mm):	Chem Kit Serial No.:	☐ Decontaminated	☐ Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence followed (number in order):
Depth to GW (m-pvc):	Screen Interval (m):	Chem Kit Model:	☐ Dedicated	Intake depth:	Hydrasleeve Type:	
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	☐ Disposable	☐ Bailer ☐ Hydrasleeve	Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	☐ Other (specify)	☐ Peristaltic Pump ☐ Waterra	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: ☐ Downhole		☐ Other (specify)	Sampling Start Time:	Hydrasleeve out
	Key Type (if applicable):	☐ Retrieved				Parameters
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:		Total purged volume (L):		

Water Quality Parameters

Location ID	Date	QA/QC	Turbidity (NTU)	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
MW453	19/03/24			4.98	36.8	5.19	140.0	31.5	Colourless, no odour, low turb
MW197	19/03/24			4.95	72.6	4.68	141.3	30.2	Colourless, v.slight low turb, slight odour
MW115	20/3/24			4.65	35.4	4.66	153.1	31.3	Colourless, no, low turb
MW205	20/03/24			4.23	18.2	5.09	143.2	31.7	" "
MW156	20/03/24			4.14	25.0	4.78	157.3	30.9	" "
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)

Analytes Sampled for:		Bottles Collected						QA/QC Information	Field Comments
Field Filtered:	Unfiltered:		x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO_3)		Bore volume calculation, bore condition, fate of tubing, redox correction etc.
			x 40 mL Vial (H_2SO_4)		x 100 mL Amber		x 250 mL Plastic		

Approval and Distribution

[redacted] — 20/3/24 (Date) — Checker Name and Signature — Date

Project Manager Signature — Date — Distribution: Project Central File

ANZ

FQM - Groundwater Sampling and Purging Record

AECOM

Q4AN(EV)-405-FM1

Project Name:	PFAS OMP SW Mass Flux	Project Number:	60612561	PM Name:	[redacted]	Surface Water/Groundwater:	SW
Client:	DoD	Project Location:	RAAF Darwin	Fieldwork Staff:		Well Development or Well Sampling Event? (circle)	

General Bore Information		Parameter Info.	Decontamination	Sampling Method	Hydrasleeve Info.	
Date of GW Level:	Bore Radius (mm):	Chem Kit Serial No.:	☐ Decontaminated	☐ Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence followed (number in order):
Depth to GW (m-pvc):	Screen Interval (m):	Chem Kit Model:	☐ Dedicated	Intake depth:	Hydrasleeve Type:	
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	☐ Disposable	☐ Bailer ☐ Hydrasleeve	Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	☐ Other (specify)	☐ Peristaltic Pump ☐ Waterra	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: ☐ Downhole		☐ Other (specify)	Sampling Start Time:	Hydrasleeve out
	Key Type (if applicable):	☐ Retrieved				Parameters
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:		Total purged volume (L):		

Water Quality Parameters

Location ID	Date	QA/QC	Turbidity (NTU)	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
SW170	30/04			—	83.6	4.82	172.4	28.4	NO, NS, low turb, colourless, No flow, Algae
SW312	↓								Dry
SW109		QC100, QC200		30	49.3	5.81	157.6	28.9	Colourless, NO, NS, low turb, Mod flow, 0.8 flow
SW305	↓								Dry
Acceptable Parameter Range:			± 10%		± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)

Analytes Sampled for:		Bottles Collected						QA/QC Information	Field Comments
Field Filtered:	Unfiltered:		x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO_3)	QC@ SW109	Bore volume calculation, bore condition, fate of tubing, redox correction etc.
			x 40 mL Vial (H_2SO_4)		x 100 mL Amber		x 250 mL Plastic		

Approval and Distribution

[redacted]

Project Manager Signature

30/4/24
Date

Checker Name and Signature

Date

Distribution: Project Central File

ANZ

FQM - NAPL and Groundwater Level Gauging Record

AECOM

Q4AN(EV)-414-FM1

Project Name:	PFAS OMP	**Project Location:**	RBD	**PM Name:**	[redacted]
Project Number:	60612561	**Client:**	DoD	**Fieldwork Staff Name:**	

Confirm NAPL and groundwater levels by repeat measurements. All columns must be completed. If NAPL is not present in a well write 'ND' (Not Detected) in the relevant column.

Well ID	Date (dd/mm/yy)	Time (24hr:mm)	HS Install (m)	Depth to LNAPL (mBTOC)	Depth to Groundwater (mBTOC)	LNAPL Thickness (m)	Depth to DNAPL (mBTOC)	Total Well Depth (mBTOC)	DNAPL Thickness (m)	Comments (well condition, odour, NAPL colour and viscosity)
MW45	19/03/24	11:20	4.040		3.040			14.840		GC
MW205	19/03/24	11:44	3.340		2.630			15.240		GC, flooded TC, sediment on probe
MW156	19/03/24	12:00	3.421		1.421			11.870		GC, sediment on probe
MW453	19/03/24	12:30	3.615		1.615			15.630		GC - flooded TC
M197	19/03/24	13:00	-		~~15.788~~ 3.612			15.788		GC, roots on probe

Make & Model:		**Supplier:**	
Serial No.:		**Calibration Report Provided?**	Yes

(PID) - photo ionisation detector; (ppm) - parts per million; (LNAPL) - light non-aqueous phase liquids; (DNAPL) - dense light non-aqueous phase liquid; (mBTOC) - metres below top of casing

Approval and Distribution

[redacted]

19/03/24
Date

Project Manager Signature

Date

Distribution: Project Central File

Name	ProjectId	DateApproved	QuoteId	Status	TurnAroundDays
NT 1302 PFASOMP 23	NT 1302 PFASOMP 2	Thu 07 Dec 2023 02:37:25 GMT	ES2019AECOMAU0030	Workorder	5

Sample Points

Id	Name	CollectionDate	MatrixId	OnHold	MaximumS	MinimumS	pH	Conductivity	Temperature	Dissolved Oxygen	Redox Potential	Observations				
001	1302_SW106_231206	6/12/2023 13:19	WATER	FALSE			7.06	40.2	26.2	3.67	48.9	Moderate turbidity	no odour	no sheen	low flow	
002	1302 SW108 231206	6/12/2023 13:27	WATER	FALSE			5.34	66.4	29.6	3.16	86	Moderate clarity	no odour	no sheen	Moderate flow	
003	1302 SW112 231206	6/12/2023 13:26	WATER	FALSE												
004	1302 SW113 231206	6/12/2023 11:19	WATER	FALSE												
005	1302_SW115_231206	6/12/2023 12:38	WATER	FALSE			6.97	376.6	32.5	5.37	34.9	Moderate turbidity	no odour	no sheen	low flow	
006	1302 SW168 231206	6/12/2023 13:37	WATER	FALSE			5.71	105.7	32.5	4.83	58.3	Moderate clarity	no odour	no sheen	low flow	
007	1302 SW120 231206	6/12/2023 10:42	WATER	FALSE								Moderare clarity	no odour	no sheen	moderate flow	
008	1302 SW124 231206	6/12/2023 10:25	WATER	FALSE			7.86	58027	31.2	6.05	78.2	Moderate clarity	no odour	no sheen	moderate flow	
009	1302 SW125 231206	6/12/2023 11:04	WATER	FALSE			9.16	455.6	29.7	10.35	8.2	Moderate clarity	no odour	no sheen	low flow	
010	1302 SW132 231206	6/12/2023 9:14	WATER	FALSE			7.06	40.2	26.2	3.67	48.9	Light brown	no odour	no sheen	no flow	
011	1302 SW133 231206	6/12/2023 9:26	WATER	FALSE			5.64	3	26.7	3.99	86.8	Low clarity	no odour	no sheen	low flow	
012	1302 SW143 231206	6/12/2023 9:59	WATER	FALSE			7.2	233.9	30.2	5.38	73.8	Moderate clarity	no odour	no sheen	low flow	natural sheen
013	1302 SW109 231206	6/12/2023 13:53	WATER	FALSE												
014	1302 QC100 231206	6/12/2023 9:49	WATER	FALSE												
015	1302 QC200 231206	6/12/2023 9:50	WATER	FALSE												
016	1302 QC300 231206	6/12/2023 14:24	WATER	FALSE												
017	1302 QC400 231206	6/12/2023 14:26	WATER	FALSE												
018	1302 QC500 231206	6/12/2023 14:28	WATER	FALSE												

Name	ProjectId	RiskDescription	DateApproved	PrimarySai	Secondary	QuoteId	Status
NT 1302 PFASOMP 24	NT 1302 PFASOMP 24		Wed 24 Jan 2024 04:57:38 GMT			ES2019AECOMAU0030	WorkorderReceived

Sample Points

Id	Name	Description	CollectionDate	Lat	Lng	MatrixId	Onhold	pH	Conductivi	Temperatu	Dissolved Oxygen	Redox Potential	Observations			
001	1302_SW109_240124		24/01/2024 12:58			WATER	FALSE	7.6	85.7	27.4	113.6	56.6	Light brow	no odour	no sheen	high flow
002	1302 SW300 240124		24/01/2024 12:22			WATER	FALSE	7.52	113.9	27.7	89.2	92.8	Colourless	no odour	no sheen	moderate flow
003	1302 SW170 240124		24/01/2024 13:47			WATER	FALSE	6.8	52.3	26.9	74.9	93.3	Brown	no odour	no sheen	low flow
004	1302 SW312 240124		24/01/2024 13:26			WATER	FALSE	7	62.1	26.8	80	86.6	Brown	no odour	no sheen	low flow
005	1302_QC100_240124		23/01/2024 9:11			WATER	FALSE									
006	1302_QC200_240124	Please forward to nmi	23/01/2024 9:11			WATER	FALSE									
007	1302 QC300 240124		23/01/2024 9:12			WATER	FALSE									
008	1302 QC400 240124		23/01/2024 9:12			WATER	FALSE									
009	1302 QC500 240124		23/01/2024 9:13			WATER	FALSE									

Name	ProjectId	RiskDescription	DateApproved	QuoteId	Status
NT_1302_PFASOMP_24	NT_1302_PFASOMP_24		Fri 08 Mar 2024 05:24:01 GMT	ES2019AE	WorkorderReceived

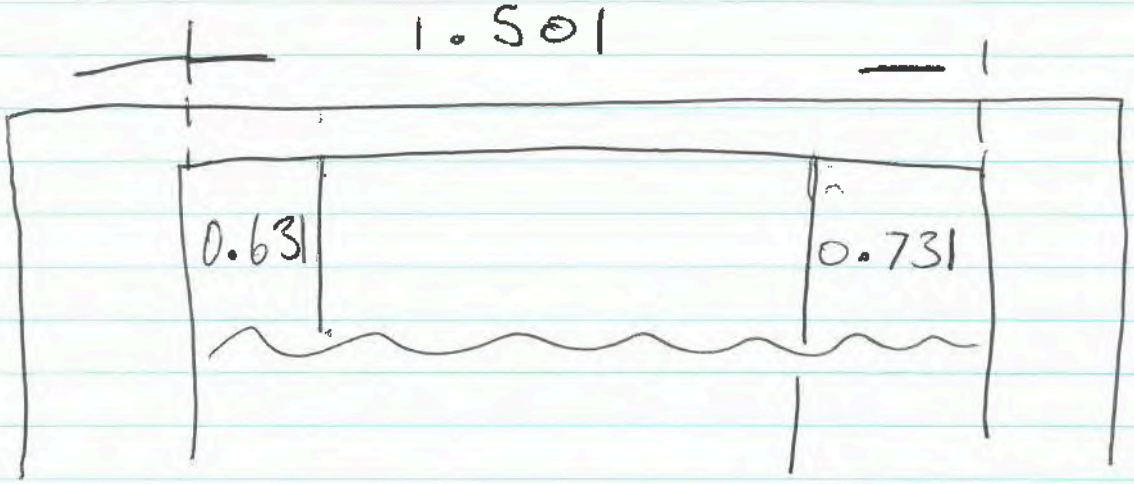
Sample Points

Id	Name	Description	CollectionDate	MatrixId	Onhold	pH	Conductivit	Temperatu	Dissolved Oxygen	Redox Potential	Observations		
001	1302_MW215_240305		5/03/2024 17:27	WATER	FALSE	5.56	100.6	30.5	1.56	144.1	Brown	no odour	no sheen
002	1302_MW297_240304		4/03/2024 16:43	WATER	FALSE	4.71	80.7	31.8	2.59	155.7	Colourless	hydrocarb	no sheen
003	1302_MW303_240305		5/03/2024 16:56	WATER	FALSE	6.28	174.6	31.5	11.45	13.6	Colourless	HCodour	no sheen
004	1302_MW422_240305		5/03/2024 16:35	WATER	FALSE	5.34	83.8	31.3	2.36	180.8	Colourless	no odour	no sheen
005	1302_MW240_240304		5/03/2024 17:49	WATER	FALSE	5.16	99.2	32.3	2.12	171.1	Colourless	no odour	no sheen
006	1302_MW241_240305		5/03/2024 17:40	WATER	FALSE	4.93	94	32	3.7	161.3	Colourless	no odour	no sheen
007	1302_MW103_240305		5/03/2024 17:14	WATER	FALSE	5.45	107.9	31.4	1.96	121.8	Colourless	no odour	no sheen
008	1302_MW107_240305		5/03/2024 17:22	WATER	FALSE	5.37	109.5	31.1	1.36	143.3	Colourless	no odour	no sheen
009	1302_MW128_240304		4/03/2024 16:16	WATER	FALSE	4.87	101.9	31.6	3.46	138	Brown	no odour	no sheen
010	1302_MW133_240304		4/03/2024 13:34	WATER	FALSE								
011	1302_MW139_240305		5/03/2024 16:30	WATER	FALSE	5	76.8	29.8	2.32	190.2	Colourless	no odour	no sheen
012	1302_MW141_240305		5/03/2024 16:22	WATER	FALSE	4.69	32.5	30	1.8	195.9	Colourless	no odour	no sheen
013	1302_MW144_240305		5/03/2024 16:07	WATER	FALSE	4.71	68.2	30.7	4.23	181.6	Colourless	no odour	no shee
014	1302_MW148_240305		5/03/2024 14:45	WATER	FALSE	4.86	56.7	31.9	1.94	161.1	Colourless	no odour	no sheen
015	1302_MW451_240305		5/03/2024 14:56	WATER	FALSE	6.33	91.7	31.1	2.2	113.5	Colourless	no odour	no sheen
016	1302_MW452_240305		5/03/2024 14:35	WATER	FALSE	5.74	126.4	31.6	2.05	132.2	Colourless	no odour	no sheen
017	1302_MW454_240305		5/03/2024 16:42	WATER	FALSE	4.99	79.7	31.2	4.51	181.2	Light brown	no odour	no sheen
018	1302_MW176_240305		5/03/2024 15:17	WATER	FALSE	5.76	179.9	31.1	4.87	172.8	Brogwhn	no odour	no sheen
019	1302_MW180_240305		5/03/2024 15:45	WATER	FALSE	5.22	89.5	33.3	5.28	165.8	Colourless	no odour	no sheen
020	1302_MW185_240305		5/03/2024 13:29	WATER	FALSE	5.39	483.7	30.9	1.93	166.4	Light brown	no odour	no sheen
021	1302_MW191_240305		5/03/2024 13:39	WATER	FALSE	5.11	110.5	32.8	3.88	158.9	Light brown	no odour	no sheen
022	1302_MW190_240305		5/03/2024 13:47	WATER	FALSE	5.17	88.2	33	1.65	158.9	Colourless	no odour	no sheen
023	1302_MW194_240305		5/03/2024 14:05	WATER	FALSE	4.9	68.3	31.8	1.58	163.2	Colourless	no odour	no sheen
024	1302_MW195_240305		5/03/2024 13:55	WATER	FALSE	5.12	60.3	31.7	2.25	156.2	Colourless	no odour	no sheen
025	1302_MW200_240305		5/03/2024 15:27	WATER	FALSE	5.05	79.3	30.8	2.23	155	Light brown	no odour	no sheen
026	1302_MW209_240305		5/03/2024 15:05	WATER	FALSE	5.22	1622	31.4	1.91	179.2	Brown	no odour	no sheen
027	1302_MW210_240305		5/03/2024 14:25	WATER	FALSE	5.18	143.3	32.8	0.97	161.7	Colourless	no odour	no sheen
028	1302_MW211_240305		5/03/2024 15:35	WATER	FALSE	5.56	2.1	31.4	2.08	163.8	Colourless	no odour	no sheen
029	1302_QC100_240305		5/03/2024 13:59	WATER	FALSE								
030	1302_QC200_240305	Forward to nmi pls	5/03/2024 13:59	WATER	FALSE								
031	1302_QC101_240305		5/03/2024 16:13	WATER	FALSE								
032	1302_QC201_240305	Forward to nmi pls	5/03/2024 16:14	WATER	FALSE								
033	1302_QC102_240305		5/03/2024 17:01	WATER	FALSE								
034	1302_QC202_240305		5/03/2024 17:02	WATER	FALSE								
035	1302_QC300_240305		7/03/2024 13:08	WATER	FALSE								
036	1302_QC400_240305		7/03/2024 13:12	WATER	FALSE								
037	1302_QC500_240305		7/03/2024 13:12	WATER	FALSE								

QC100 & QC200 taken here

PFASOMP SW Mass Flux - 24/01/24

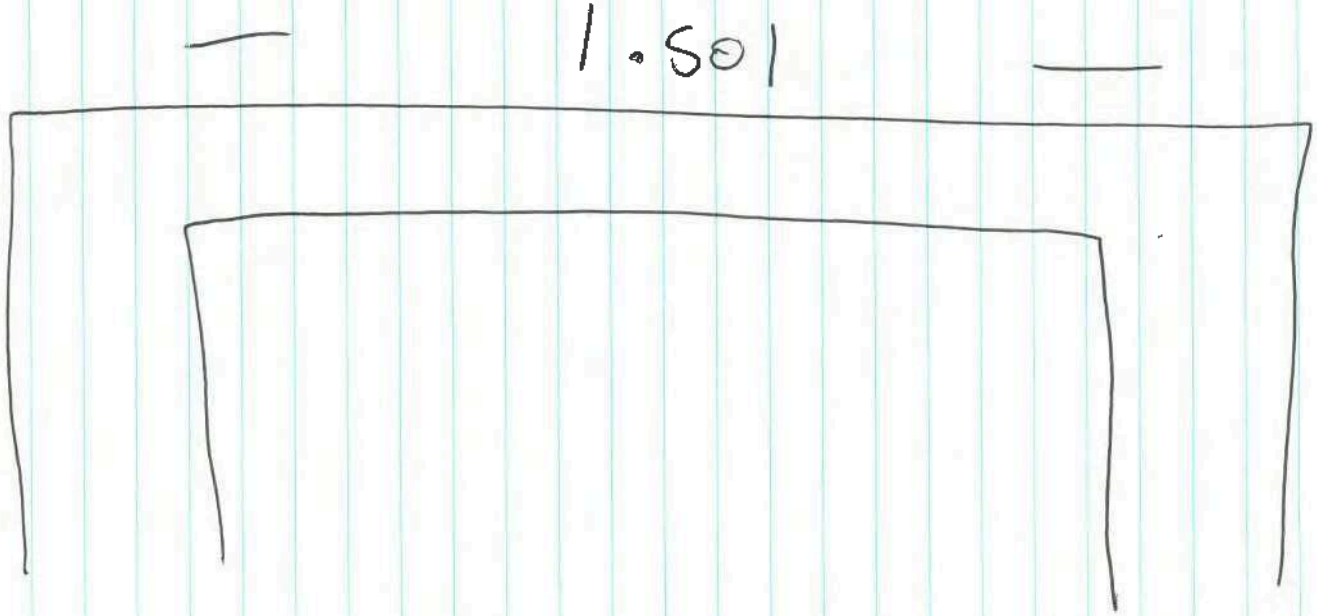
SW312



Flow = 0.2

Brown, low flow, no odour & no sheen.

SW312 SW Mass Flux 15/02/24



* No flow
* Algae
* Brown, moderate turbidity, no odour, no sheen

SW170 SW Mass Flux - 15.02.2024

11.5m

South

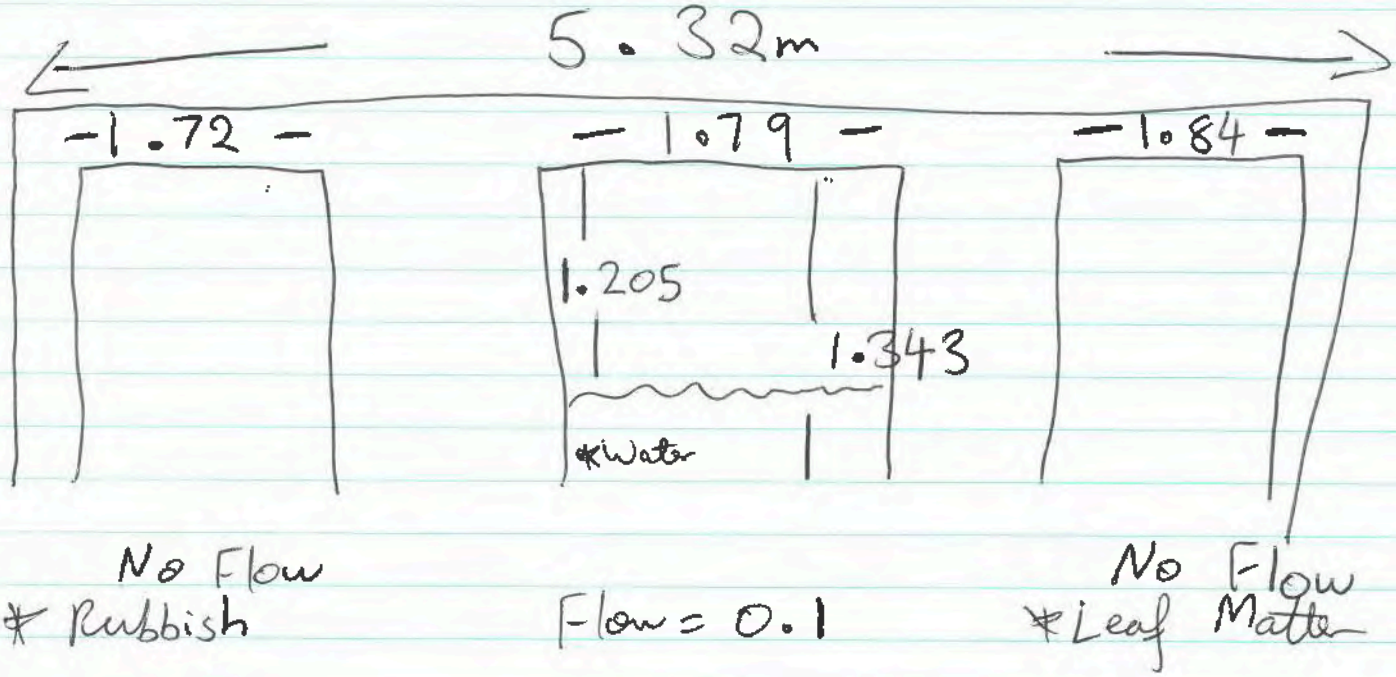
1.27m	1.27m	1.27m	1.27	1.27	1.27	1.27	1.27m
SWL = 0.863 Bottom = 1.361 No flow	SWL = 0.860 Bottom = 1.480 No flow	SWL = 0.855 Bottom = 1.355 No flow	SWL = 0.865 Bottom = 1.315 No flow	SWL = 0.822 Bottom = 1.272 No flow	SWL = 0.813 Bottom = 1.262 No flow	SWL = 0.796 Bottom = 1.172 No flow	SWL = 0.781 Bottom = 1.456 No flow

Brown, no odour, no sheen, high turbidity

no flow

PFASOMP SW Mass Flux - 24/01/24

SW300



AECOM

Pre-Start Meeting Record

S4AN-700-FM1

Project Name:	PFAS DMP
Meeting Location:	Darwin
Meeting Date:	15/02/24
Supervisor's Name:	[redacted] Signature: [redacted]

Items Raised at Previous Pre-Start Meeting Addressed	Action By	Date
(Discuss results from yesterday's pre-start & site inspection(s), any outstanding issues?)		
○ Fauna - spiders in gating		

Activities Occurring Today	Action By	Date
(Write down the activities that are occurring today & discuss how risks will be managed)		
○ L+ SW mass flux		

Risk assessments (SHEMP, SWMS, etc.) confirmed as current, specific & signed?

☑ YES

☐ NO (If no, review & update).

General Issues	Action By	Date
Discuss general issues here e.g. interface/environmental)		
○ Hydration		
○ Traffic management		

Items Raised by Team Members	Action By	Date
Write any additional issues raised by project team, consider Step Back Cards, hazard reports, observations, external events here)		
○ Being mindful of water vehicles		

Pre-Start Meeting Checklist for work today:

☑ Permits in place for activities	☑ MSDS available for all substances	☐ Weather forecast reviewed
☐ All workers site inducted	☑ PPE available & checked fit for purpose	☑ New workers/visitors identified
☑ Step Back Cards available	☑ First Aiders & Evacuation point identified	☑ All plant & equipment checked

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Pre-Start Meeting Record

S4AN-700-FM1

Project Name:	PFAS DMP
Meeting Location:	Darwin
Meeting Date:	15/02/24
Supervisor's Name:	[redacted] Signature: [redacted]

Items Raised at Previous Pre-Start Meeting Addressed	Action By	Date
(Discuss results from yesterday's pre-start & site inspection(s), any outstanding issues?)		
○ Fauna - spiders in gating		

Activities Occurring Today	Action By	Date
(Write down the activities that are occurring today & discuss how risks will be managed)		
○ L+ SW mass flux		

Risk assessments (SHEMP, SWMS, etc.) confirmed as current, specific & signed?

☑ YES

☐ NO (If no, review & update).

General Issues	Action By	Date
Discuss general issues here e.g. interface/environmental)		
○ Hydration		
○ Traffic management		

Items Raised by Team Members	Action By	Date
Write any additional issues raised by project team, consider Step Back Cards, hazard reports, observations, external events here)		
○ Being mindful of water vehicles		

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☑ Step Back Cards available	☑ First Aiders & Evacuation point identified	☑ All plant & equipment checked

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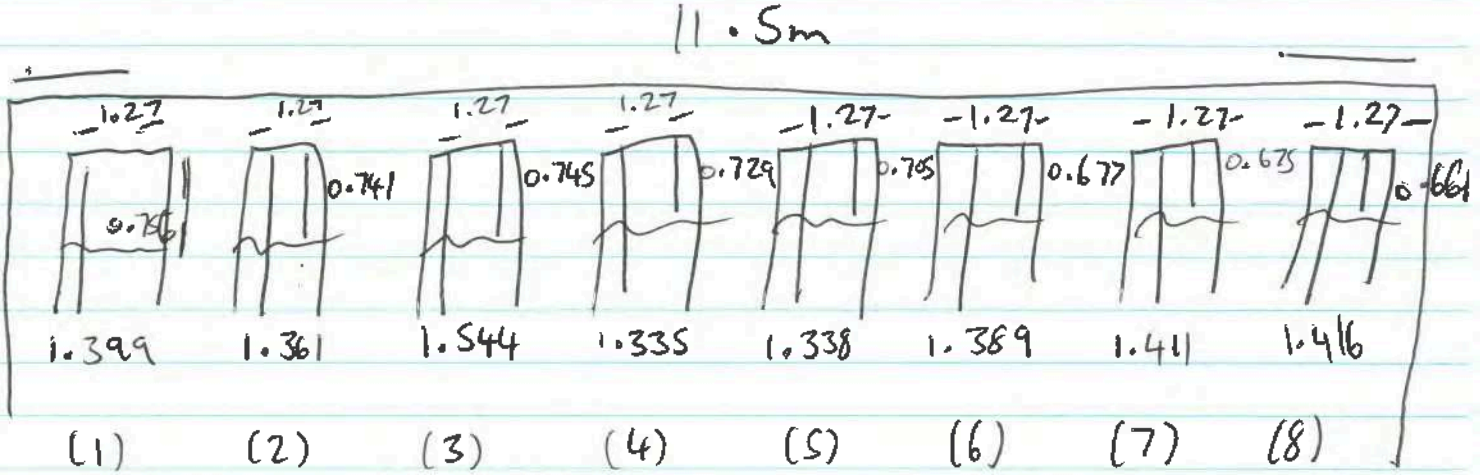
PFASOMP Sw Mass Flux - 24/01/24

SW170



low flow, brown, no odour, no sheen, high turbidity

8th Culvert had a 0.1 flow.

8th Culvert - towards air side
1st Culvert - towards the start of the road as you pass the gate.

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ANZ

FQM - Sample QAQC Tracking Sheet

Q4AN(EV)-011-FM1

Project Name:	PFAS OMPSW MS/Flux	**Project Number:**	60612561
Project Location:	RAAF Darwin	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff:**	[redacted]

QAQC Information

QAQC ID	Primary Sample ID	Sample Type	Date
QC100	SW109	Intra Duplicate	30/4/24
QC700	SW109	Intra Trip	30/4/24
~~QC200~~ QC300	Glove	Rinsate	30/4/24
QC400		Field Blank	
QC500		Trip blank	

QA\QC Project Requirements

QAQC	Required		Frequency		Method Used
Field Duplicates	☑ Yes	☐ No	☑ 1 in 10	☐ 1 in 20	
Field Triplicates	☑ Yes	☐ No	☑ 1 in 10	☐ 1 in 20	
Rinsate Blanks	☑ Yes	☐ No	☑ 1 per matrix/equipment/day		
Field Blanks	☑ Yes	☐ No	☑ 1 per day		
Trip Blanks	☑ Yes	☐ No	☑ 1 per ice chest		
Trip Spikes	☐ Yes	☐ No	☐ 1 per ice chest		

Approval and Distribution

[redacted]

Project Manager Signature

30/4/24
Date

Date

Distribution: Project Central File

AECOM

ANZ

FQM - Sample QAQC Tracking Sheet

Q4AN(EV)-011-FM1

Project Name:	PFAS OMPSW MS/Flux	**Project Number:**	60612561
Project Location:	RAAF Darwin	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff:**	[redacted]

QAQC Information

QAQC ID	Primary Sample ID	Sample Type	Date
QC100	SW109	Intra Duplicate	30/4/24
QC700	SW109	Intra Trip	30/4/24
~~QC200~~ QC300	Glove	Rinsate	30/4/24
QC400		Field Blank	
QC500		Trip blank	

QA\QC Project Requirements

QAQC	Required		Frequency		Method Used
Field Duplicates	☑ Yes	☐ No	☑ 1 in 10	☐ 1 in 20	
Field Triplicates	☑ Yes	☐ No	☑ 1 in 10	☐ 1 in 20	
Rinsate Blanks	☑ Yes	☐ No	☑ 1 per matrix/equipment/day		
Field Blanks	☑ Yes	☐ No	☑ 1 per day		
Trip Blanks	☑ Yes	☐ No	☑ 1 per ice chest		
Trip Spikes	☐ Yes	☐ No	☐ 1 per ice chest		

Approval and Distribution

[redacted]

Project Manager Signature

30/4/24
Date

Date

Distribution: Project Central File

AECOM

ANZ

FQM - Sample QAQC Tracking Sheet

Q4AN(EV)-011-FM1

Project Name:	PFASOMP	**Project Number:**	60612561
Project Location:	DWN	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff:**	[redacted]

QC Information

QAQC ID	Primary Sample ID	Sample Type	Batch Number
QC100	intra	MW195	—
QC200	inter	MW195	—
QC101	intra	MW144	—
QC201	inter	MW144	—
QC102	intra	MW303	—
QC202	inter	MW303	—
QC100	intra	SW133	—
QC200	inter	SW133	—
QC101	intra	SW168	—
QC201	inter	SW168	—
QC102	intra	SW114	—
QC202	inter	SW114	—

GW

SW

QA\QC Project Requirements

QAQC	Required		Frequency		Method Used
Field Duplicates	☑ Yes	☐ No	☐ 1 in 10	☐ 1 in 20	
Field Triplicates	☑ Yes	☐ No	☐ 1 in 10	☐ 1 in 20	
Rinsate Blanks	☑ Yes	☐ No	☐ 1 per matrix/equipment/day		
Field Blanks	☑ Yes	☐ No	☑ 1 per day		
Trip Blanks	☑ Yes	☐ No	☑ 1 per ice chest		
Trip Spikes	☐ Yes	☑ No	☐ 1 per ice chest		

Approval and Distribution

[redacted]

Fieldwork Staff Signature — Date: 5/3/24

Project Manager Signature — Date:

Distribution: Project Central File

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ANZ

FQM - Sample QAQC Tracking Sheet

Q4AN(EV)-011-FM1

Project Name:	PFAS OMP	**Project Number:**	60612561
Project Location:	RBD	**Client:**	D&D
PM Name:	[redacted]	**Fieldwork Staff:**	[redacted]

QAQC Information

QAQC ID	Primary Sample ID	Sample Type	Batch Number
QC100	MW156	Field dup	
QC200	MW156	Field dup	
QC300	Clove	Rinsate	
QC400		field blank	
QC500		trip blank	
QC401		field blank	
QC301	Clove	rinsate	

QAQC Project Requirements

QAQC	Required		Frequency		Method Used
Field Duplicates	☑ Yes	☐ No	☑ 1 in 10	☐ 1 in 20	
Field Triplicates	☐ Yes	☑ No	☐ 1 in 10	☐ 1 in 20	
Rinsate Blanks	☑ Yes	☐ No	☑ 1 per matrix/equipment/day		
Field Blanks	☑ Yes	☐ No	☑ 1 per day		
Trip Blanks	☑ Yes	☐ No	☑ 1 per ice chest		
Trip Spikes	☐ Yes	☑ No	☐ 1 per ice chest		

Approval and Distribution

[redacted]

Project Manager Signature

20/03/24
Date

Date

Distribution: Project Central File

Appendix D

Data Validation Reports

DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561 - PFASOMP	**Date:**	23/01/2024
Site:	1302 – RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney & NMI	**Date:**	
Lab reference:	ES2342430, ES2343471, RN1414076, RN1415182, RN141793		

Key Findings:

The surface water analytical data can be used as a basis for interpretation, subject to the limitations outlined below:

- The potential exists for concentrations of PFOS to be above the adopted PFAS Freshwater 99% Species Protection guideline (0.00023 µg/L), but below the laboratory LOR (0.01 µg/L) in all primary samples excluding 1302_SW124_231206, 1302_SW115_231206, 1302_SW124_231206 and 1302_SW178_231213.

Component		Outliers			Material impact on interpretation
		No	Yes	Comment	
Frequency of field quality assurance/quality control (QAQC)		✓			No
Number of tests requested/reported		✓			No
Sample handling/preservation/holding times			✓	1	No
Frequency of laboratory QA/QC			✓	2	No
Limits of reporting (LOR)			✓	3	No
Blank analysis	Field blank		✓	4	No
	Rinsate blank		✓	5	No
	Trip blank	✓			No
	Method blank	✓			No
Field intra-laboratory relative percent differences (RPDs)		✓			No
Field inter-laboratory RPDs		✓			No
Laboratory duplicate RPDs		✓			No
Matrix spike (MS) % recoveries		✓			No
Laboratory control spike (LCS) % recoveries		✓			No
Surrogate % recoveries		✓			No
Other observations		✓			No

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Comments

1. Sample handling/preservation/ holding times

Handling/preservation

Laboratory batches were received outside of the recommended temperature range (≤6°C):

Batch Number	Temperature (°C)
ES2342430	20.2
ES2343471	8.8

Potential under reporting must be taken into consideration. However, due to the nature of PFAS not being volatile, that all samples were received below ambient groundwater temperature at the time of sampling (~30 °C), the samples were immediately cooled upon collection, and lastly that the primary and inter-laboratory RPDs were collected at the required frequency and generally within control limits, the potential for under reporting is not considered to materially affect the interpretation of results.

2. Frequency of laboratory QA/QC

Laboratory duplicate samples were not reported for Per- and Polyfluoroalkyl Substances (PFAS) in the primary lab batches ES2342430 and ES2343471. The precision of the data can be assessed as acceptable based on intra- and interlaboratory duplicate RPDs which were reported at the required frequencies and generally within control limits.

Matrix spikes were not reported at the required frequencies for per- and Polyfluoroalkyl Substances (PFAS) in the primary batch ES2342430. he precision of the data can be assessed as acceptable based on intra- and interlaboratory duplicate RPDs which were reported at the required frequencies and generally within control limits.

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3.	Limits of Reporting	Limits of reporting were sufficiently low to enable assessment against adopted guideline criteria (NEMP 2020 guidelines), with the exception of PFOS against the freshwater species protection guideline value (99%). The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR for all primary samples excluding 1302_SW124_231206, 1302_SW115_231206, 1302_SW124_231206 and 1302_SW178_231213.
4.	Field Blank	As per project specifications, field blanks were collected at a rate of one per sampling date for all sampling days, with the exception of the following: - 15 December 2023 As concentrations were reported below the LOR in the available field blanks and rinsate blank samples, as well as the nature of PFAS not being volatile, cross contamination via volatilization during sampling is assessed to not have occurred.
5.	Rinsate Blank	As per project specifications, rinsate blanks were collected at a rate of one per sampling date for all sampling days with the exception of the following: - 15 December 2023 The decontamination methods are assessed as acceptable and the potential for cross contamination via sampling methods is considered unlikely based on the following: - All sampling equipment was either dedicated, disposable or decontaminated with a solution of water and Liquinox between sampling locations. - Dedicated water containers and clean disposable gloves were used to collect each sample. - The decontamination methods and field staff were consistent over the course of the sampling events - Concentrations of all analytes were reported below the LOR in the rinsate samples analysed.

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QA/QC Blanks

	Lab Report	ES2342430	ES2343471	ES2342430	ES2343471	ES2342430	ES2343471
	Field ID	1302_QC300_231206	1302_QC300_231214	1302_QC400_231206	1302_QC400_231214	1302_QC500_231206	1302_QC500_231214
	Sampled Date	6/12/2023 12:54	14/12/2023 13:30	6/12/2023 12:56	14/12/2023 13:30	6/12/2023 12:58	14/12/2023 13:30
	Sample Type	Rinsate	Rinsate	Field Blank	Field Blank	Trip Blank	Trip Blank
Analyte	**Units**	**LOR**					
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
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 sulfonic acid (8:2 FTS)	µg/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 sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorobutane sulfonic acid (PFBS)	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
Perfluorodecanesulfonic acid (PFDS)	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
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	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
Perfluorohexanoic acid (PFHxA)	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
Perfluorooctane sulfonamide (FOSA)	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
Perfluoropentanoic acid (PFPeA)	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
Perfluorotridecanoic acid (PFTrDA)	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
Sum of PFAS	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
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Data Validation Report
Field RPDs
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Relative Percentage Difference

Lab Report Number	ES2342430	ES2342430		ES2343471	ES2343471		ES2343471	ES2343471		ES2342430	RN1414076		ES2343471	RN1415793		ES2343471	RN1415182	
Field ID	1302 SW133 231206	1302 QC100 231206	**RPD**	1302 SW285 231213	1302 QC100 231213	**RPD**	1302 SW152 231214	1302 QC101 231214	**RPD**	1302 SW133 231206	1302 QC200 231206	**RPD**	1302 SW152 231214	1302 QC201 231214	**RPD**	1302 SW285 231213	1302 QC200 231213	**RPD**
Sample Type	Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Inter-lab Duplicate	
Sampled Date	6/12/2023 7:56	6/12/2023 7:56		13/12/2023 13:30	13/12/2023 13:30		14/12/2023 13:30	14/12/2023 13:30		6/12/2023 7:56	6/12/2023 7:56		14/12/2023 13:30	14/12/2023 13:30		13/12/2023 13:30	13/12/2023 13:30	

Analyte	Units	LOR																		
PFAS Full Suite	µg/L	0.01	0.04	0.04	0	0.07	0.07	0	0.12	0.12	0	0.04			0.12			0.07		
10:2 Fluorotelomer sulfonic acid (10:2 F	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	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	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 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	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
8:2 Fluorotelomer sulfonic acid (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	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
N-Ethyl perfluorooctane sulfonamide (Et	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
N-Ethyl perfluorooctane sulfonamidoace	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
N-Ethyl perfluorooctane sulfonamidoetha	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	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamide (N	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
N-Methyl perfluorooctane sulfonamidoac	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
N-Methyl perfluorooctane sulfonamidoeth	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	<0.05	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.05	0	<0.1	<0.05	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	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<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)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
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	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
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	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<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
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<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	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<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	<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	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Sum of PFAS	µg/L	0.01	0.04	0.04	0	0.07	0.07	0	0.12	0.12	0	0.04	0.048	18	0.12	0.13	8	0.07	0.072	3
Sum of PFHxS and PFOS	µg/L	0.01	0.04	0.04	0	0.07	0.07	0	0.12	0.15	22	0.04	0.048	18	0.12	0.13	8	0.07	0.072	3
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01 : 0.02 (Interlab)	0.02	0.02	0	0.04	0.04	0	0.12	0.12	0	0.02	0.021	5	0.12	0.11	9	0.04	0.032	22
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.02	0.02	0	0.03	0.03	0	<0.01	<0.01	0	0.02	0.017	16	<0.01	<0.01	0	0.03	0.03	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: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 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

AECOM

DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	01/03/2024
Site:	RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney & NMI Sydney	**Date:**	04/03/2024
Lab reference:	ES2404842; RN1420031		

Key Findings:

The surface water analytical data can be used as a basis for interpretation.

Component		Outliers			Material impact on interpretation
		No	Yes	Comment	
Frequency of field quality assurance/quality control (QAQC)		✓			No
Number of tests requested/reported		✓			No
Sample handling/preservation/holding times			✓	1	No
Frequency of laboratory QA/QC			✓	2	No
Limits of reporting (LOR)			✓	3	No
Blank analysis	Field blank	✓			No
	Rinsate blank	✓			No
	Trip blank	✓			No
	Method blank	✓			No
Field intra-laboratory relative percent differences (RPDs)		✓			No
Field inter-laboratory RPDs		✓			No
Laboratory duplicate RPDs		✓			No
Matrix spike (MS) % recoveries		✓			No
Laboratory control spike (LCS) % recoveries		✓			No
Surrogate % recoveries		✓			No
Other observations		✓			

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Comments	
1. Sample handling /preservation /holding times	Laboratory batches were received outside of the recommended temperature range (≤6°C): **Batch Number** / **Temperature (°C)** ES2404842 / 27.0 °C RN1420031 / Chilled Potential under reporting must be taken into consideration. However, the potential for under reporting is not considered to materially affect the interpretation of results due to the nature of Per- and Polyfluoroalkyl Substances (PFAS) not degrading via volatilisation, that all samples were received below ambient groundwater temperature at the time of sampling (~30 °C) and that the samples were immediately cooled upon collection.
2. Frequency of laboratory QA/QC	Laboratory duplicate samples were not reported for PFAS in the primary batch ES2404842. The precision of the data can be assessed as acceptable based on intra- and inter-laboratory duplicate RPDs which were reported at the required frequency and generally within control limits. Matrix spikes were not reported for PFAS in the primary batch ES2404842. The accuracy of the data can be assessed as acceptable based on method blanks, LCS and surrogate spike recoveries (which were reported at the required frequencies and within control limits).
3. Limits of Reporting (LOR)	Limits of reporting were sufficiently low to enable assessment against adopted guideline criteria, with the exception of PFOS. The potential exists for concentrations of PFOS to be below the LOR, but above the 99% freshwater ecosystem species guideline. As all primary samples reported concentrations of PFOS above the LOR, hence above the adopted guideline value, this is not expected to affect the interpretation of results.

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QAQC Blanks

Lab Report	ES2404842	ES2404842	ES2404842
Field ID	1302_QC300_240215	1302_QC400_240215	1302_QC500_240215
Sampled Date	15/02/2024 11:05	15/02/2024 11:06	15/02/2024 11:06
Sample Type	Rinsate	Field Blank	Trip Blank

Analyte	Units	LOR			
PFAS Full Suite					
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	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
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01

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Relative Percentage Difference

Lab Report Number	ES2404842	ES2404842		ES2404842	RN1420031	
Field ID	1302_SW170_240215	1302_QC100_240215	**RPD**	1302_SW170_240215	1302_QC200_240215	**RPD**
Sample Type	Primary	Inter-lab Duplicate		Primary	Intra-lab Duplicate	
Sampled Date	15/02/2024 12:07	15/02/2024 12:07		15/02/2024 12:07	15/02/2024 12:07	

Analyte	**Units**	**LOR**						
PFAS Full Suite								
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.03	0	0.03	0.022	31
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	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
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.06	0.06	0	0.06	0.049	20
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.04	29	0.03	0.019	45
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<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	<0.01	0
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01 : 0.02 (Interlab)	0.54	0.66	20	0.54	0.53	2
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	0.02	0.02	0	0.02	<0.01	67
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.26	0.28	7	0.26	0.26	0

DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	07/02/2024
Site:	RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney & NMI Sydney	**Date:**	07/02/2024
Lab reference:	ES2402439; RN1417898		

Key Findings:

The surface water analytical data can be used as a basis for interpretation, subject to the limitations outlined below:

- The potential exists for concentrations of PFOS to be below the LOR, but above the guideline in samples 1302_SW300_240124 and should be taken into consideration when interpreting results.

Component		Outliers			Material impact on interpretation
		No	Yes	Comment	
Frequency of field quality assurance/quality control (QAQC)		✓			No
Number of tests requested/reported		✓			No
Sample handling/preservation/holding times			✓	1	No
Frequency of laboratory QA/QC		✓			No
Limits of reporting (LOR)			✓	2	No
Blank analysis	Field blank	✓			No
	Rinsate blank	✓			No
	Trip blank	✓			No
	Method blank	✓			No
Field intra-laboratory relative percent differences (RPDs)		✓			No
Field inter-laboratory RPDs		✓			No
Laboratory duplicate RPDs		✓			No
Matrix spike (MS) % recoveries		✓			No
Laboratory control spike (LCS) % recoveries		✓			No
Surrogate % recoveries		✓			No
Other observations		✓		NA	

Comments	
1. Sample handling/preservation/holding times	Laboratory batches were received outside of the recommended temperature range (≤6°C):

Batch Number	Temperature (°C)
ES2402439	8.7 °C
RN1417898	Chilled

Potential under reporting must be taken into consideration. However, the potential for under reporting is not considered to materially affect the interpretation of results due to the nature of PFAS not degrading via volatilisation, the samples were received below ambient surface water temperature at the time of sampling (25.8 °C) and the samples were immediately cooled upon collection.

2. Limits of Reporting (LOR)

Limits of reporting were sufficiently low to enable assessment against adopted guideline criteria, with the exception of PFOS in the primary batch. The potential exists for concentrations of PFOS to be below the LOR, but above the 99% freshwater ecosystem species guideline in 1302_SW300_240124 and should be taken into consideration when interpreting results.

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QAQC Blanks

Lab Report	ES2402439	ES2402439	ES2402439
Field ID	1302_QC300_240124	1302_QC400_240124	1302_QC500_240124
Sampled Date	24/01/2024 7:42	24/01/2024 7:42	24/01/2024 7:43
Sample Type	Rinsate	Field Blank	Trip Blank

Analyte		**LOR**			
PFAS Full Suite					
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	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
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01

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Surface Water - Relative Percentage Difference

Lab Report Number	ES2402439	ES2402439		ES2402439	RN1417898		
Field ID	1302_SW312_240124	1302_QC100_240124	**RPD**	1302_SW312_240124	1302_QC200_240124	**RPD**	
Sample Type	Primary	Intra-lab Duplicate		Primary	Inter-la Duplicate		
Sampled Date/Time	24/01/2024 11:56	24/01/2024 11:56		24/01/2024 11:56	24/01/2024 11:56		

Analyte	**Units**	**LOR**						
Sum of (Br1 to Br10)	mg/l	1e-005	0.00004	0.00004	0	0.00004		
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	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
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<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	<0.01	0
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01 : 0.02 (Interlab)	0.04	0.04	0	0.04	0.029	32
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0

**High RPDs are in bold (Acceptable RPDs for each LOR multiplier range are: 200 (1-10 x LOR); 50 (10-20 x LOR); 30 (> 20 x LOR))

***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

DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	20/03/2024
Site:	1302- RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney & NMI	**Date:**	13/05/2024
Lab reference:	ES2407635, ES2407639, ES2409473, RN1422100, RN1422105, RN1424007		

Key Findings:

The groundwater and surface water analytical data can be used as a basis for interpretation, subject to the limitations outlined below:

- The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR for primary samples 1302_MW209_240305. This should be taken into consideration when interpreting data and using data quantitatively.
- Elevated RPDs should be taken into consideration when interpreting concentrations for PFOS close to guidelines.

Component		Outliers			Material impact on interpretation
		No	Yes	Comment	
Frequency of field quality assurance/quality control (QAQC)			✓	1	No
Number of tests requested/reported		✓			No
Sample handling/preservation/holding times			✓	2	No
Frequency of laboratory QA/QC			✓	3	No
Limits of reporting (LOR)			✓	4	No
Blank analysis	Field blank	✓			No
	Rinsate blank	✓			No
	Trip blank	✓			No
	Method blank	✓			No
Field intra-laboratory relative percent differences (RPDs)		✓			No
Field inter-laboratory RPDs			✓	5	No
Laboratory duplicate RPDs		✓			No
Matrix spike (MS) % recoveries		✓			No
Laboratory control spike (LCS) % recoveries		✓			No
Surrogate % recoveries		✓			No
Other observations/ general comments		✓			No

Comments

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DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	20/03/2024
Site:	1302- RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney & NMI	**Date:**	13/05/2024
Lab reference:	ES2407635, ES2407639, ES2409473, RN1422100, RN1422105, RN1424007		

1.	Frequency of field quality assurance/quality control (QAQC)	As per project specifications, rinsate blank samples were analysed at a frequency of one per day, with the exception of 4 March 2024. The decontamination methods for this field date are assessed as acceptable and the potential for cross-contamination via sampling methods is considered unlikely based on the following: • All sampling equipment was either dedicated, disposable or decontaminated with a solution of water and Decon 90 between sampling locations • Dedicated sample bottles and clean disposable gloves were used to collect each sample • The decontamination methods and field staff were consistent over the course of the sampling event • Concentrations of all analytes were reported below the LOR in the rinsate samples analysed • Laboratory results are consistent with field observations and no evidence of cross-contamination is apparent.
2.	Sample handling/preservation/holding times	**Sample Preservation** The sample receipt temperatures were outside of the recommended range (≤6°C) for primary laboratory batches ES2407635 (16.3-16.6°C), ES2407639 (16.3-16.6°C) and ES2409473 (7.8°C). The secondary laboratory batches were noted to be received as 'chilled'. Potential under-reporting must be taken into consideration. However, as samples were received well below the ambient groundwater temperature at the time of sampling (~30 °C) and the samples were immediately cooled upon collection, the potential for under-reporting is not considered to materially affect the interpretation of results.
3.	Frequency of laboratory QA/QC	Laboratory duplicate samples were not reported in primary batch ES2407635 and not reported at the required frequency in primary batch ES2407639 for PFAS. The precision of the data can be assessed as acceptable based on intra- and inter-laboratory duplicate RPDs (which were reported at the required frequencies and within control limits, with the exceptions listed in Comment 4 below), and where available laboratory duplicate RPDs for the same analytical method group (which were reported within control limits). Matrix spikes were not reported in primary batch ES2407635 and not reported at the required frequency in primary batch ES2407639 for PFAS method group. The accuracy of the data can be assessed as acceptable based on method blanks, LCS and surrogate spike recoveries (which were reported at the required frequencies and within control limits, with the exceptions listed in Comment 4 below), and where available matrix spike recoveries for the same analytical method group (which were reported within control limits).

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DATA VALIDATION REPORT; WATER

Project Manager:	[redacted]	**Validation by:**	[redacted]
Project number:	60612561	**Date:**	20/03/2024
Site:	1302- RAAF Base Darwin		
Matrix:	Water	**Data Verified by:**	[redacted]
Laboratory:	ALS Sydney & NMI	**Date:**	13/05/2024
Lab reference:	ES2407635, ES2407639, ES2409473, RN1422100, RN1422105, RN1424007		

4.	Limits of reporting (LOR)	Limits of reporting were sufficiently low to enable assessment against adopted guideline criteria, with the exception of PFOS in water. The potential exists for concentrations of PFOS to be above the adopted PFAS Freshwater 99% Species Protection guideline (0.00023 µg/L), but below the laboratory LOR. (0.01 µg/L) for 1302_MW209_240305 and 1302_SW115_240306. This should be taken into consideration when interpreting PFOS results against guidelines for the above listed samples.
5.	Field inter-laboratory relative percent differences (RPDs)	Field inter-laboratory duplicate RPDs for ES2407635 were reported within control limits, with the exception of the following, higher concentrations are in bold (as shown in the RPD table): • **1302_MW144_240305** & 1302_QC201_240305 for PFOS (35%) • **1302_MW303_240305** & 1302_QC202_240305 for PFHpS (53%) • **1302_MW303_240305** & 1302_QC202_240305 for PFHxA (58%) • **1302_MW303_240305** & 1302_QC202_240305 for PFPeS(42%) • **1302_MW303_240305** & 1302_QC202_240305 for PFOS (38%) • **1302_MW303_240305** & 1302_QC202_240305 for PFHxS (46%) • **1302_MW156_240305** & 1302_QC200_240320 for PFHxA (37%) • **1302_MW156_240305** & 1302_QC200_240320 for PFOS (86%) • **1302_MW156_240305** & 1302_QC200_240320 for PFHxS (73%) • **1302_SW114_240306** & 1302_QC202_240320 for PFOS (65%) As there are no adopted guideline values for Perfluoroheptane sulfonic acid (PFHpS), Perfluorohexanoic acid (PFHxA), Perfluoropentane sulfonic acid (PFPeS) and Perfluorohexane sulfonic acid (PFHxS), the elevated RPDs are not expected to affect the interpretation of results against guidelines. However, the elevated RPDs should be taken into consideration when using the data quantitatively. As all concentrations of PFOS (and the sum of PFHxS+PFOS), were reported well above or well below the adopted guidelines and/or LOR, the elevated RPDs are not considered to affect the interpretation of results against guidelines. However, the elevated RPD should be taken into consideration when using the data quantitatively. As a conservative approach, the higher concentration reported at 1302_MW144_240305, 1302_MW303_240305, 1302_MW156_240320 and 1302_SW114_240306 (primary samples result) should be used when interpreting results quantitatively.

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Data Validation Report
Groundwater Field RPDs
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Groundwater - Relative Percentage Difference

	Lab Report Number		**ES2407635**	**ES2407635**		**ES2407635**	**RN1422100**		**ES2407635**	**ES2407635**		**ES2407635**	**RN1422100**		**ES2407635**	**ES2407635**		**ES2407635**	**RN1422100**		**ES2409473**	**ES2409473**		**ES2409473**	**RN1424007**	
	Field ID		1302_MW195_240305	1302_QC100_240305	**RPD**	1302_MW195_240305	1302_QC200_240305	**RPD**	1302_MW144_240305	1302_QC101_240305	**RPD**	1302_MW144_240305	1302_QC201_240305	**RPD**	1302_MW303_240305	1302_QC102_240305	**RPD**	1302_MW303_240305	1302_QC202_240305	**RPD**	1302_MW156_240320	1302_QC100_240320	**RPD**	1302_MW156_240320	1302_QC200_240320	**RPD**
	Sample Date		5/03/2024	5/03/2024		5/03/2024	5/03/2024		5/03/2024	5/03/2024		5/03/2024	5/03/2024		5/03/2024	5/03/2024		5/03/2024	5/03/2024		20/03/2024	20/03/2024		20/03/2024	20/03/2024	
	Sample Type		Primary	Intra-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Inter-lab Duplicate	
Analyte	**Units**	**LOR**																											
PFAS Full Suite																													
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<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	<0.05	<0.05	0	<0.05	<0.01	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<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	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	<0.05	0	<0.05	<0.01	0	<0.05	0.06	18	<0.05	0.042	0	<0.05	<0.05	0	<0.05	<0.01	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<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	<0.05	<0.05	0	<0.05	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<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	<0.02	<0.02	0	<0.02	<0.01	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	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<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	<0.02	<0.02	0	<0.02	<0.01	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	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	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	0.01	0	0.1	0.1	0	0.1	0.077	26	2.11	1.98	6	2.11	1.8	16	0.23	0.24	4	0.23	0.17	30
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0	<0.1	<0.05	0	0.6	0.5	18	0.6	0.59	2	<0.1	<0.1	0	<0.1	0.053	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<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	<0.02	<0.02	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	<0.02	0	<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 (Interlab)	<0.02	<0.02	0	<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	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0	0.05	0.04	22	0.05	0.021	82	1.47	1.3	12	**1.47**	**0.85**	**53**	0.16	0.17	6	0.16	0.079	68
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.02	0	<0.02	<0.01	0	0.58	0.58	0	0.58	0.43	30	0.06	0.06	0	0.06	0.032	61
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.03	0	0.03	0.02	40	0.11	0.1	10	0.11	0.088	22	5.66	4.7	19	**5.66**	**3.1**	**58**	0.51	0.52	2	**0.51**	**0.35**	**37**
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<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	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<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	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	0.02	0	<0.02	0.013	0	0.1	0.1	0	0.1	0.066	41	2.77	2.84	2	**2.77**	**1.8**	**42**	0.26	0.27	4	0.26	0.17	42
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.02	0	0.02	0.02	0	0.02	<0.02	0	0.98	0.9	9	0.98	0.76	25	0.1	0.1	0	0.1	0.073	31
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.05	0	<0.05	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<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	<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	<0.01	0	<0.02	<0.02	0	<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
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01 : 0.02 (Interlab)	0.41	0.38	8	0.41	0.33	22	1.14	1.02	11	**1.14**	**0.80**	**35**	19	18.9	1	**19**	**13**	**38**	6.55	5.99	9	**6.55**	**2.6**	**86**
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	0.04	0.03	29	0.04	0.027	39	1.23	1.2	2	1.23	0.91	30	0.13	0.13	0	0.13	0.079	49
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.19	0.18	5	0.19	0.17	11	0.8	0.73	9	0.8	0.68	16	19.2	19.5	2	**19.2**	**12**	**46**	2.36	2.44	3	**2.36**	**1.1**	**73**

*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: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 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

Data Validation Report
Surface Water Field RPDs
PFAS Ongoing Monitoring Plan
Department of Defence - RAAF Base Darwin

Surface Water - Relative Percentage Difference

Lab Report Number	ES2407639	ES2407639		ES2407639	ES2407639		ES2407639	ES2407639		ES2407639	RN1422105		ES2407639	RN1422105		ES2407639	RN1422105	
Field ID	1302_SW133_240306	1302_QC100_240306	**RPD**	1302_SW168_240306	1302_QC101_240306	**RPD**	1302_SW114_240306	1302_QC102_240306	**RPD**	1302_SW133_240306	1302_QC200_240306	**RPD**	1302_SW168_240306	1302_QC201_240306	**RPD**	1302_SW114_240306	1302_QC202_240306	**RPD**
Sample Type	Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Intra-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Inter-lab Duplicate		Primary	Inter-lab Duplicate	
Sample Date	6/03/2024	6/03/2024		6/03/2024	6/03/2024		6/03/2024	6/03/2024		6/03/2024	6/03/2024		6/03/2024	6/03/2024		6/03/2024	6/03/2024	
Analyte	**Units**	**LOR**																
PFAS Full Suite																		
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	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	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	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 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	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
8:2 Fluorotelomer sulfonic acid (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	<0.01	0	<0.05	<0.01	0	<0.05	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	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	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	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	<0.05	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.04	0.05	22	0.14	0.13	7	<0.02	<0.01	0	0.04	0.034	16	0.14	0.12	15
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	<0.05	0	<0.1	<0.05	0	<0.1	<0.05	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	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<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)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.02	0.02	0	0.08	0.08	0	<0.02	<0.01	0	0.02	<0.01	67	0.08	0.043	60
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.02	0.03	40	0.04	0.03	29	<0.02	<0.01	0	0.02	0.015	29	0.04	0.021	62
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.11	0.11	0	0.28	0.25	11	<0.02	<0.01	0	0.11	0.078	34	0.28	0.21	29
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	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.05	0.05	0	0.15	0.14	7	<0.02	<0.01	0	0.05	0.032	44	0.15	0.11	31
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	0	0.03	0.03	0	0.06	0.06	0	<0.02	<0.02	0	0.03	0.021	35	0.06	0.048	22
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.02	0	<0.05	<0.02	0	<0.05	<0.02	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<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	<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	<0.01	0	<0.02	<0.01	0	<0.02	<0.01	0
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01 : 0.02 (Interlab)	0.02	0.01	67	0.65	0.66	2	2.54	2.35	8	0.02	<0.02	0	0.65	0.49	28	**2.54**	**1.3**	**65**
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	0.04	0.05	22	0.07	0.07	0	<0.01	<0.01	0	0.04	0.031	25	0.07	0.051	31
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.01	<0.01	0	0.3	0.34	13	1.2	1.24	3	0.01	<0.01	0	0.3	0.27	11	1.2	1.1	9

*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: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 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

QA/QC Blanks

Lab Report Number	ES2407635	ES2407639	ES2409473	ES2409473	ES2407635	ES2407639	ES2409473	ES2409473	ES2407635	ES2407639	ES2409473
Field ID	1302_QC400_240305	1302_QC400_240306	1302_QC400_240319	1302_QC401_240320	1302_QC300_240305	1302_QC300_240306	1302_QC300_240319	1302_QC301_240320	1302_QC500_240305	1302_QC500_240306	1302_QC500_240320
Sample Date	5/03/2024	6/03/2024	19/03/2024	20/03/2024	5/03/2024	6/03/2024	19/03/2024	20/03/2024	5/03/2024	6/03/2024	20/03/2024
Sample Type	Field Blank	Field Blank	Field Blank	Field Blank	Rinsate	Rinsate	Rinsate	Rinsate	Trip Blank	Trip Blank	Trip Blank
Analyte	**Units**	**LOR**										
PFAS Full Suite												
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
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
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
8:2 Fluorotelomer sulfonic acid (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
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
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
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
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
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	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 sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
Perfluorooctanoic Acid (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
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

Appendix E

Chain of Custody

AECOM 1302 PAGE 1 of 6 Chain of Custody

AECOM Australia Pty Ltd

[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name
Lab. Ref:

Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Environmental Division Sydney
Work Order Reference
ES2337477

Telephone : + 61-2-8784 8555

Sampled By [redacted] **Project Name:** NT_1302_PFASOMP_23 **AECOM Project #:** 60612561/3.1 **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 6.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat 7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: HOLD	Notes
1	1302_BIOAFA315_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
2	1302_BIOAFA316_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
3	1302_BIOAFA317_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
4	1302_BIOAFA318_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
5	1302_BIOAFA319_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
6	1302_BIOAFA320_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
7	1302_BIOAFA321_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
8	1302_BIOAFA322_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
9	1302_BIOAFA323_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
10	1302_BIOAFA324_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
11	1302_BIOAFA325_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
12	1302_BIOAFA326_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
13	1302_BIOAFA327_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
14	1302_BIOAFA328_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & Invoice: [redacted]

Lab Report No. | Ekky ID

Relinquished by: [redacted] Signed: Date: 27/10/2023

Received by: Signed: Date:

Relinquished by: Date:

Received by: [redacted] Date: 31/10/23

COC emailed to ALS Darwin (excel & PDF)

AECOM

AECOM Australia Pty Ltd [redacted]

[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name: [redacted]
Lab. Ref:

Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat	7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtred	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: PFAS-D	Notes
15	1302_BIOAFA329_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
16	1302_BIOAFA330_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
17	1302_BIOAFA331_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
18	1302_BIOAFA332_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
19	1302_BIOAFA333_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
20	1302_BIOAFA334_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
21	1302_BIOAFA335_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
22	1302_BIOAFA336_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
23	1302_BIOAFA337_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
24	1302_BIOAFA338_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
25	1302_BIOAFA339_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
26	1302_BIOAFA340_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
27	1302_BIOAFA341_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
28	1302_BIOAFA342_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold

Comments: Please send ESdat files to [redacted] nsure that the files use the PROJECT NA[redacted]

Temp. received: °C

Report & invoic[redacted]

Lab Report No. Esdy ID

Relinquished by: [redacted] Signed: Date: 27/10/2023 Relinquished by: Date:

Received by: Signed: Date: Received by: [redacted] Date: 31/10/2023

AECOM

AECOM Australia Pty Ltd
[redacted]
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name [redacted]
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat	7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtrd	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	Analysis Request: HOLD	Notes
29	1302_BIOAFA343_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
30	1302_BIOAFA344_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
31	1302_BIOAFA345_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
32	1302_BIOAFA346_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
33	1302_BIOAFA347_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
34	1302_BIOAFA348_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
35	1302_BIOAFA349_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
36	1302_BIOAFA350_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
37	1302_BIOAFA351_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
38	1302_BIOAFA352_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
39	1302_BIOAFA353_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
40	1302_BIOAFA354_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
41	1302_BIOAFA355_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
42	1302_BIOAFA356_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold

Comments: Please send ESdat files to [redacted] and ensure that the files use the PROJECT NAME.
Temp. received: °C
Report & invoice: [redacted]
Lab Report No.
Eslip ID

Relinquished by: [redacted] Signed: Date: 27/10/2023
Received by: Signed: Date:
Relinquished by: Date:
Received by: [redacted] Date: 31/10/[illegible]

AECOM

1302 PAGE 4 of 6 Chain of Custody

AECOM Australia Pty Ltd

[redacted]

[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name
Lab. Ref:

Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat 7. Project Manager:

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtred	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Notes
43	1302_BIOAFA357_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
44	1302_BIOAFA358_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
45	1302_BIOAFA359_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
46	1302_BIOAFA360_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
47	1302_BIOAFA361_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
48	1302_BIOAFA362_231025	25 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
49												
50												
51												
52												
53												
54												
55												
56												

Comments: Please send ESdat files to [redacted] nd ensure that the files use the PROJECT NA

Temp. received: °C

Report & invoi [redacted]

Lab Report No. Eplex ID

Relinquished by: [redacted] Signed: Date: 27/10/2023

Received by: Signed: Date:

Relinquished by: Date:

Received by: [redacted] Date: 31/10/2023

AECOM

1302 PAGE 5 of 6 Chain of Custody

AECOM Australia Pty Ltd
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name
Lab. Ref:

Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By: [redacted]

Project Name: NT_1302_PFASOMP_23

AECOM Project #: 60612561/3.1

Purchase Order No:

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y

6. Report Format: ESdat 7. Project Manager:

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtred	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Notes
57	1302_QC148_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
58	1302_QC149_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
59	1302_QC150_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
60	1302_QC151_231017	17 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
61	1302_QC152_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
62	1302_QC153_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
63	1302_QC154_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
64	1302_QC155_231018	18 Oct 2023	X						X	Snap bag	x	re-freeze when on hold
65	1302_QC201_231017	17 Oct 2023	X						X	Snap bag	x	Frozen biota - PLS FWD TO NMI
66	1302_QC202_231017	17 Oct 2023	X						X	Snap bag	x	Frozen biota - PLS FWD TO NMI
67	1302_QC203_231018	18 Oct 2023	X						X	Snap bag	x	Frozen biota - PLS FWD TO NMI
68	1302_QC204_231018	18 Oct 2023	X						X	Snap bag	x	Frozen biota - PLS FWD TO NMI
69	1302_QC304_231019	19 Oct 2023		X				X		Bottle	x	
70	1302_QC504_231027	27 Oct 2023		X				X		Bottle	x	

Comments: Please send ESdat files to [redacted] and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & Invoice: [redacted]

Lab Report No. Easy ID

Relinquished by: [redacted] Signed: Date: 27/10/2023

Received by: Signed: Date:

Relinquished [redacted] Date:

Received by: [redacted] Date: 31/10/2023

AECOM

 Chain of Custody

AECOM Australia Pty Ltd
[redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address: [redacted]
Contact Name: [redacted]
Lab. Ref:
Tel: [redacted]
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19 v2

Sampled By [redacted] **Project Name: NT_1302_PFASOMP_23** **AECOM Project #: 60612561/3.1** **Purchase Order No:**

Specifications: Please report in ESdat format RE-FREEZE BIOTA SAMPLES

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: RE-FREEZE BIOTA SAMPLES)	Y
6. Report Format: ESdat	7. Project Manager:

Lab. ID	Sample ID	Sampling Date	Matrix: biota	Matrix: water	Matrix:	Preservation: filtred	Preservation: acid	Preservation: ice	Preservation: frozen	Container (No. & type)	HOLD	Analysis Request	Notes
1	1302_QC505_231019	19 Oct 2023		X				X		Bottle	X		
											X		
											X		
											X		
											X		
											X		
											X		
											X		
											X		

Comments: Please send ESdat files [redacted] ensure that the files use the PROJECT [redacted]

Temp. received: °C

Report & Invoice: [redacted]

Lab Report No. | Eday ID

Relinquished by: [redacted] Signed: Date: 27/10/2023

Received by: Signed: Date:

Relinquished by: Date:

Received by: [redacted] Date: 31/10/2023

CHAIN OF CUSTODY

ALS COC#: 61176 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 8/12/23 0830

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_SW106_231206		06/12/2023 01:19 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_SW108_231206		06/12/2023 01:27 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_SW112_231206		06/12/2023 01:26 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_SW113_231206		06/12/2023 11:19 AM	WATER	ALS: 2 Non ALS: 0	No	X		
005	1302_SW115_231206		06/12/2023 12:38 PM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_SW168_231206		06/12/2023 01:37 PM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_SW120_231206		06/12/2023 10:42 AM	WATER	ALS: 2 Non ALS: 0	No	X		

Subcon / ~~Forward Sal~~ / Split WO
Lab / Analysis:
Organised By / Date:
Relinquished By / Date:
Connote / Courier: QC FWD
WO No: ES2342430
Attach By PO / Internal Sheet:

Environmental Division
Sydney
Work Order Reference
ES2342430

Telephone : +61-2-8784 8555

CHAIN OF CUSTODY

COC#: 61176 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 8/12/23 0830

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	1302_SW124_231206		06/12/2023 10:25 AM	WATER	ALS: 2 Non ALS: 0	No	X		
009	1302_SW125_231206		06/12/2023 11:04 AM	WATER	ALS: 2 Non ALS: 0	No	X		
010	1302_SW132_231206		06/12/2023 09:14 AM	WATER	ALS: 2 Non ALS: 0	No	X		
011	1302_SW133_231206		06/12/2023 09:26 AM	WATER	ALS: 2 Non ALS: 0	No	X		
012	1302_SW143_231206		06/12/2023 09:59 AM	WATER	ALS: 2 Non ALS: 0	No	X		
013	1302_SW109_231206		06/12/2023 01:53 PM	WATER	ALS: 2 Non ALS: 0	No	X		
014	1302_QC100_231206		06/12/2023 09:49 AM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: **61176** *ALS Laboratory:* ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 8/12/23 0830

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE: / ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
~~015~~	1302_QC200_231206		06/12/2023 09:50 AM	WATER	ALS: 2 Non ALS: 0	No	X		
016	1302_QC300_231206		06/12/2023 02:24 PM	WATER	ALS: 2 Non ALS: 0	No	X		
017	1302_QC400_231206		06/12/2023 02:26 PM	WATER	ALS: 2 Non ALS: 0	No	X		
018	1302_QC500_231206		06/12/2023 02:28 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 61176 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE: / ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 8/12/23 0830

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	1302_SW106_231206	HDPE (no PTFE)	20 mL	00350822083189	Grey	No	
001	1302_SW106_231206	HDPE (no PTFE)	20 mL	00350822061684	Grey	No	
002	1302_SW108_231206	HDPE (no PTFE)	20 mL	00350822083145	Grey	No	
002	1302_SW108_231206	HDPE (no PTFE)	20 mL	00350822082958	Grey	No	
003	1302_SW112_231206	HDPE (no PTFE)	20 mL	00350822061780	Grey	No	
003	1302_SW112_231206	HDPE (no PTFE)	20 mL	00350822061814	Grey	No	
004	1302_SW113_231206	HDPE (no PTFE)	20 mL	00350822058103	Grey	No	
004	1302_SW113_231206	HDPE (no PTFE)	20 mL	00350822057967	Grey	No	
005	1302_SW115_231206	HDPE (no PTFE)	20 mL	00350522025853	Grey	No	
005	1302_SW115_231206	HDPE (no PTFE)	20 mL	00350522025884	Grey	No	
006	1302_SW168_231206	HDPE (no PTFE)	20 mL	00350822061783	Grey	No	
006	1302_SW168_231206	HDPE (no PTFE)	20 mL	00350822061769	Grey	No	
007	1302_SW120_231206	HDPE (no PTFE)	20 mL	00350822083006	Grey	No	
007	1302_SW120_231206	HDPE (no PTFE)	20 mL	00350822082911	Grey	No	
008	1302_SW124_231206	HDPE (no PTFE)	20 mL	00350621037731	Grey	No	
008	1302_SW124_231206	HDPE (no PTFE)	20 mL	00350621058103	Grey	No	
009	1302_SW125_231206	HDPE (no PTFE)	20 mL	00350522025959	Grey	No	
009	1302_SW125_231206	HDPE (no PTFE)	20 mL	00350522025850	Grey	No	
010	1302_SW132_231206	HDPE (no PTFE)	20 mL	00350522025851	Grey	No	
010	1302_SW132_231206	HDPE (no PTFE)	20 mL	00350522026191	Grey	No	
011	1302_SW133_231206	HDPE (no PTFE)	20 mL	00350522026041	Grey	No	
011	1302_SW133_231206	HDPE (no PTFE)	20 mL	00350522026160	Grey	No	
012	1302_SW143_231206	HDPE (no PTFE)	20 mL	00350822083049	Grey	No	
012	1302_SW143_231206	HDPE (no PTFE)	20 mL	00350822082991	Grey	No	
013	1302_SW109_231206	HDPE (no PTFE)	20 mL	00350522026166	Grey	No	
013	1302_SW109_231206	HDPE (no PTFE)	20 mL	00350522026077	Grey	No	

CHAIN OF CUSTODY

COC#: 61176 *ALS Laboratory:* ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: SY/139/19 V3 / ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 8/12/23 0830

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	1302_QC100_231206	HDPE (no PTFE)	20 mL	00350522025923	Grey	No	
014	1302_QC100_231206	HDPE (no PTFE)	20 mL	00350522025992	Grey	No	
015	1302_QC200_231206	HDPE (no PTFE)	20 mL	00350822058054	Grey	No	
015	1302_QC200_231206	HDPE (no PTFE)	20 mL	00350822058090	Grey	No	
016	1302_QC300_231206	HDPE (no PTFE)	20 mL	00350822061757	Grey	No	
016	1302_QC300_231206	HDPE (no PTFE)	20 mL	00350822061693	Grey	No	
017	1302_QC400_231206	HDPE (no PTFE)	20 mL	00350522026385	Grey	No	
017	1302_QC400_231206	HDPE (no PTFE)	20 mL	00350522025903	Grey	No	
018	1302_QC500_231206	HDPE (no PTFE)	20 mL	00350522025994	Grey	No	
018	1302_QC500_231206	HDPE (no PTFE)	20 mL	00350522026136	Grey	No	

Total Bottle Count: ALS: 36, Non ALS: 0

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: AECOM	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ⊗ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	
PROJECT: NT_1302_PFASOMP-23	ALS QUOTE NO.: SY/139/19 V3
ORDER NUMBER: 60612561 / 4.1**	
PROJECT MANAGER: [redacted]	CONTACT PH: [redacted]
SAMPLER: WR/SF/PH	SAMPLER MOBILE [redacted]
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):

COC SEQUENCE NUMBER (Circle)
COC: (1) 2 3 4 5 6 7
OF: 1 (2) 3 4 5 6 7

FOR 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 comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:
[redacted]	[redacted]	[redacted]
DATE/TIME:	14-12-23 1230	DATE/TIME: 16/12/23 12pm

[redacted] ADDRESS/STORAGE OR DISPOSAL: Forward QC200s to NMI Sydney

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).	Additional Information
LAB ID	Sample ID: 1302_MWXXX_220XXX	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	PFAS - EP231X	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	1302_SW285_231213	13.12.23	W		3 2	X	
2	1302_QC100_231213	〃					Extra bottle for lab QCs
—	1302_QC200_231213						
3	1302_SW114_231213						Please send to Brisbane
4	1302_SW104_231213.						
5	1302_SW302_231213						
6	1302_SW170_231213						
7	1302_SW312_231213						
8	1302_SW178_231213						
9	1302_SW181_231213						
10	1302_SW162_231213	↓					
11	1302_SW152_231213	14.12.23					

Forward Lab / Split WO
Lab / Analysis: QC200 Brisbane
Organised By / Date:
Relinquished By / Date:
Courier / Courier:
WO No:
Attach By PO / Internal Sheet:

LAB OF ORIGIN: DARWIN

Environmental Division Sydney
Work Order Reference
ES2343471

Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Pres Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: AECOM

OFFICE:

PROJECT: NT_1302_PFASOMP 23

ORDER NUMBER: 60612561 / 4.1[illegible]

PROJECT MANAGER: [redacted]

SAMPLER: [redacted]

COC emailed to ALS? (YES / NO) [redacted]

EDD FORMAT (or default): [redacted]

TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

- ✱ Standard TAT (List due date):
- ☐ Non Standard or urgent TAT (List due date):

ALS QUOTE NO.: SY/139/19 V3

COC SEQUENCE NUMBER (Circle)

COC: 1 (2) 3 4 5 6 7

OF: 1 (2) 3 4 5 6 7

FOR 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 comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME:	[redacted] 14.12.23 1230	DATE/TIME:	DATE/TIME:

[redacted] DISPOSAL: Forward QC200s to NMI Sydney

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	Sample ID: 1302_MWXXX_220XXX	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	PFAS - EP231X								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
12	1302_QC101_231214	14.12.23	W		2	X								
13	1302_QC201_231214													
14	1302-SW160_231214													
15	1302-SW156_231214													
16	1302-SW108_231206													
17	1302-QC300-231214													
18	1302-QC400-231214													
19	1302-QC500-231214													

LAB OF ORIGIN: DARWIN

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

CHAIN OF CUSTODY

COC#: 62846 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 25/1/24 1430

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_SW109_240124		24/01/2024 12:58 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_SW300_240124		24/01/2024 12:22 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_SW170_240124		24/01/2024 01:47 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_SW312_240124		24/01/2024 01:26 PM	WATER	ALS: 2 Non ALS: 0	No	X		
005	1302_QC100_240124		23/01/2024 09:11 AM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_QC200_240124	Please forward to nmi	23/01/2024 09:11 AM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_QC300_240124		23/01/2024 09:12 AM	WATER	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Sydney
Work Order Reference
ES2402439

Telephone : +61-2-6784 8555

Subcon (Forward Lab) Split WO

Lab / Analysis: NMI

Organised By / Date:

Relinquished By / Date:

Connote / Courier: QC FWD

WO No: ES240

Attached By PO / Internal Sheet:

CHAIN OF CUSTODY

(ALS) COC#: 62846 *ALS Laboratory:* ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 25/1/24 1430

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE: / ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	1302_QC400_240124		23/01/2024 09:12 AM	WATER	ALS: 2 Non ALS: 0	No	X		
009	1302_QC500_240124		23/01/2024 09:13 AM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 62846 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 25/1/24 1430

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE: / ES2019AECOMAU0030

EMAIL REPORTS 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	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	1302_SW109_240124	HDPE (no PTFE)	20 mL	00350822015979	Grey	No	
001	1302_SW109_240124	HDPE (no PTFE)	20 mL	00350822016140	Grey	No	
002	1302_SW300_240124	HDPE (no PTFE)	20 mL	00350822015831	Grey	No	
002	1302_SW300_240124	HDPE (no PTFE)	20 mL	00350822016295	Grey	No	
003	1302_SW170_240124	HDPE (no PTFE)	20 mL	00352309065885	Grey	No	
003	1302_SW170_240124	HDPE (no PTFE)	20 mL	00352309065847	Grey	No	
004	1302_SW312_240124	HDPE (no PTFE)	20 mL	00352309065656	Grey	No	
004	1302_SW312_240124	HDPE (no PTFE)	20 mL	00352309065459	Grey	No	
005	1302_QC100_240124	HDPE (no PTFE)	20 mL	00351221011651	Grey	No	
005	1302_QC100_240124	HDPE (no PTFE)	20 mL	00352309065720	Grey	No	
006	1302_QC200_240124	HDPE (no PTFE)	20 mL	00352309065709	Grey	No	
006	1302_QC200_240124	HDPE (no PTFE)	20 mL	00352309065730	Grey	No	
007	1302_QC300_240124	HDPE (no PTFE)	20 mL	00350822016042	Grey	No	
007	1302_QC300_240124	HDPE (no PTFE)	20 mL	00350822016307	Grey	No	
008	1302_QC400_240124	HDPE (no PTFE)	20 mL	00350822015844	Grey	No	
008	1302_QC400_240124	HDPE (no PTFE)	20 mL	00350822016342	Grey	No	
009	1302_QC500_240124	HDPE (no PTFE)	20 mL	00350822016421	Grey	No	
009	1302_QC500_240124	HDPE (no PTFE)	20 mL	00350822015827	Grey	No	

Total Bottle Count: ALS: 18, Non ALS: 0

CHAIN OF CUSTODY

ALS COC#: 64714 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: [redacted] 8/3/24 1330

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_SW104_240306		06/03/2024 04:53 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_SW106_240306		06/03/2024 03:55 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_SW108_240306		06/03/2024 03:31 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_SW109_240306		06/03/2024 03:10 PM	WATER	ALS: 2 Non ALS: 0	No	X		
005	1302_SW112_240306		06/03/2024 05:20 PM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_SW113_240306		06/03/2024 05:30 PM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_SW114_240306		06/03/2024 04:32 PM	WATER	ALS: 2 Non ALS: 0	No	X		

Subcon (Forward Lab) Split WO
Lab / Analysis: NMI
Organised By / Date:
Relinquished By / Date:
Connote / Courier: QC FWD
WO No: ES2407639
Attached By PO / Internal Sheet:

Environmental Division
Sydney
Work Order Reference
ES2407639

Telephone : +61-2-8784 8555

CHAIN OF CUSTODY

COC#: 67055 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	[redacted]
DATE TIME:	DATE TIME:	DATE TIME:	2/5/24 1530

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_SW_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_SW109_240430		30/04/2024 03:28 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_SW170_240430		30/04/2024 03:30 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_QC100_240430		30/04/2024 03:31 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_QC200_240430		30/04/2024 03:32 PM	WATER	ALS: 2 Non ALS: 0	No	X		Pls forward to NMI
005	1302_QC300_240430		30/04/2024 03:37 PM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_QC400_240430		30/04/2024 03:39 PM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_QC500_240430		30/04/2024 03:42 PM	WATER	ALS: 2 Non ALS: 0	No	X		

Subcon / Forward Lab / Split WO
Lab / Analysis: NMI
Organised By / Date:
Relinquished By / Date:
Connote / Courier: QC FWD
WO No: ES2414224
Attach By / Internal Sheet:

Environmental Division
Sydney
Work Order Reference
ES2414224

Telephone : +61-2-8784 8555

CHAIN OF CUSTODY

ALS COC#: 67055 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 2/5/24 1530

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_SW_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU0030

EMAIL REPORTS 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	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	1302_SW109_240430	HDPE (no PTFE)	20 mL	00352309075623	Grey	No	
001	1302_SW109_240430	HDPE (no PTFE)	20 mL	00352309075626	Grey	No	
002	1302_SW170_240430	HDPE (no PTFE)	20 mL	00352309075415	Grey	No	
002	1302_SW170_240430	HDPE (no PTFE)	20 mL	00352309075435	Grey	No	
003	1302_QC100_240430	HDPE (no PTFE)	20 mL	00352309081924	Grey	No	
003	1302_QC100_240430	HDPE (no PTFE)	20 mL	00352309075226	Grey	No	
004	1302_QC200_240430	HDPE (no PTFE)	20 mL	00352309075535	Grey	No	
004	1302_QC200_240430	HDPE (no PTFE)	20 mL	00352309075439	Grey	No	
005	1302_QC300_240430	HDPE (no PTFE)	20 mL	00352309075311	Grey	No	
005	1302_QC300_240430	HDPE (no PTFE)	20 mL	00352309075605	Grey	No	
006	1302_QC400_240430	HDPE (no PTFE)	20 mL	00352309075272	Grey	No	
006	1302_QC400_240430	HDPE (no PTFE)	20 mL	00352309075578	Grey	No	
007	1302_QC500_240430	HDPE (no PTFE)	20 mL	00352309075491	Grey	No	
007	1302_QC500_240430	HDPE (no PTFE)	20 mL	00352309075589	Grey	No	

Total Bottle Count: ALS: 14, Non ALS: 0

CHAIN OF CUSTODY

COC#: **63886** *ALS Laboratory:* ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_SW_24

ORDER NO: 60612561/4.1

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:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_SW109_2401215		15/02/2024 11:10 AM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_SW300_240215		15/02/2024 10:49 AM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_SW170_240215		15/02/2024 12:07 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_SW312_240215		15/02/2024 11:53 AM	WATER	ALS: 2 Non ALS: 0	No	X		
005	1302_QC300_240215		15/02/2024 11:05 AM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_QC400_240215		15/02/2024 11:06 AM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_QC500_240215		15/02/2024 11:06 AM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: **63886** *ALS Laboratory:* ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_SW_24

ORDER NO: 60612561/4.1

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:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	1302_QC100_240215		15/02/2024 12:05 PM	WATER	ALS: 2 Non ALS: 0	No	X		
009	1302_QC200_240215	Forward to NMI	15/02/2024 12:05 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: **63886** *ALS Laboratory:* ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_SW_24

ORDER NO: 60612561/4.1

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:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	1302_SW109_2401215	HDPE (no PTFE)	20 mL	00350822016050	Grey	No	
001	1302_SW109_2401215	HDPE (no PTFE)	20 mL	00350822015828	Grey	No	
002	1302_SW300_240215	HDPE (no PTFE)	20 mL	00350822015847	Grey	No	
002	1302_SW300_240215	HDPE (no PTFE)	20 mL	00350822016096	Grey	No	
003	1302_SW170_240215	HDPE (no PTFE)	20 mL	00350822016090	Grey	No	
003	1302_SW170_240215	HDPE (no PTFE)	20 mL	00350822016614	Grey	No	
004	1302_SW312_240215	HDPE (no PTFE)	20 mL	00350822016159	Grey	No	
004	1302_SW312_240215	HDPE (no PTFE)	20 mL	00350822016007	Grey	No	
005	1302_QC300_240215	HDPE (no PTFE)	20 mL	00350822015918	Grey	No	
005	1302_QC300_240215	HDPE (no PTFE)	20 mL	00350822015930	Grey	No	
006	1302_QC400_240215	HDPE (no PTFE)	20 mL	00350822015955	Grey	No	
006	1302_QC400_240215	HDPE (no PTFE)	20 mL	00350822016059	Grey	No	
007	1302_QC500_240215	HDPE (no PTFE)	20 mL	00350822015806	Grey	No	
007	1302_QC500_240215	HDPE (no PTFE)	20 mL	00350822015841	Grey	No	
008	1302_QC100_240215	HDPE (no PTFE)	20 mL	00350822016629	Grey	No	
008	1302_QC100_240215	HDPE (no PTFE)	20 mL	00350822016350	Grey	No	
009	1302_QC200_240215	HDPE (no PTFE)	20 mL	00350822015809	Grey	No	
009	1302_QC200_240215	HDPE (no PTFE)	20 mL	00350822016333	Grey	No	

Total Bottle Count: ALS: 18, Non ALS: 0

CHAIN OF CUSTODY

ALS COC#: 64714 ALS Laboratory: ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	1302_SW115_240306		06/03/2024 03:40 PM	WATER	ALS: 2 Non ALS: 0	No	X		
009	1302_SW168_240306		06/03/2024 03:22 PM	WATER	ALS: 2 Non ALS: 0	No	X		
010	1302_SW120_240306		06/03/2024 02:23 PM	WATER	ALS: 2 Non ALS: 0	No	X		
011	1302_SW124_240306		06/03/2024 01:58 PM	WATER	ALS: 2 Non ALS: 0	No	X		
012	1302_SW125_240306		06/03/2024 02:29 PM	WATER	ALS: 2 Non ALS: 0	No	X		
013	1302_SW132_240306		06/03/2024 12:43 PM	WATER	ALS: 2 Non ALS: 0	No	X		
014	1302_SW133_240306		06/03/2024 01:13 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: 64714 ALS Laboratory: ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3
SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
015	1302_SW143_240306		06/03/2024 12:18 PM	WATER	ALS: 2 Non ALS: 0	No	X		
016	1302_SW300_240306		06/03/2024 02:58 PM	WATER	ALS: 2 Non ALS: 0	No	X		
017	1302_SW152_240306		06/03/2024 11:28 AM	WATER	ALS: 2 Non ALS: 0	No	X		
018	1302_SW160_240306		06/03/2024 10:37 AM	WATER	ALS: 2 Non ALS: 0	No	X		
019	1302_SW162_240306		06/03/2024 10:55 AM	WATER	ALS: 2 Non ALS: 0	No	X		
020	1302_SW170_240306		06/03/2024 11:36 AM	WATER	ALS: 2 Non ALS: 0	No	X		
021	1302_SW178_240306		06/03/2024 11:14 AM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 64714 ALS Laboratory: ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
022	1302_SW181_240306		06/03/2024 11:03 AM	WATER	ALS: 2 Non ALS: 0	No	X		
023	1302_QC100_240306		06/03/2024 01:16 PM	WATER	ALS: 2 Non ALS: 0	No	X		
~~024~~	1302_QC200_240306		06/03/2024 01:17 PM	WATER	ALS: 2 Non ALS: 0	No	X		
025	1302_QC101_240306		06/03/2024 03:24 PM	WATER	ALS: 2 Non ALS: 0	No	X		
~~026~~	1302_QC201_240306		06/03/2024 03:24 PM	WATER	ALS: 2 Non ALS: 0	No	X		
027	1302_QC102_240306		06/03/2024 04:37 PM	WATER	ALS: 2 Non ALS: 0	No	X		
~~028~~	1302_QC202_240306		06/03/2024 04:37 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: **64714** *ALS Laboratory:* ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
029	1302_QC300_240306		06/03/2024 03:12 PM	WATER	ALS: 2 Non ALS: 0	No	X		
030	1302_QC400_240306		06/03/2024 03:13 PM	WATER	ALS: 2 Non ALS: 0	No	X		
031	1302_Q500_240306		06/03/2024 03:13 PM	WATER	ALS: 2 Non ALS: 0	No	X		
032	1302_SW312_240306		06/03/2024 11:46 AM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 64714 ALS Laboratory: ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

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	1302_SW104_240306	HDPE (no PTFE)	20 mL	00350822016497	Grey	No	
001	1302_SW104_240306	HDPE (no PTFE)	20 mL	00350822015916	Grey	No	
002	1302_SW106_240306	HDPE (no PTFE)	20 mL	00350822015870	Grey	No	
002	1302_SW106_240306	HDPE (no PTFE)	20 mL	00350822016539	Grey	No	
003	1302_SW108_240306	HDPE (no PTFE)	20 mL	00350822015991	Grey	No	
003	1302_SW108_240306	HDPE (no PTFE)	20 mL	00350822015856	Grey	No	
004	1302_SW109_240306	HDPE (no PTFE)	20 mL	00350822016108	Grey	No	
004	1302_SW109_240306	HDPE (no PTFE)	20 mL	00350822016014	Grey	No	
005	1302_SW112_240306	HDPE (no PTFE)	20 mL	00350822016375	Grey	No	
005	1302_SW112_240306	HDPE (no PTFE)	20 mL	00350822015976	Grey	No	
006	1302_SW113_240306	HDPE (no PTFE)	20 mL	00350822016516	Grey	No	
006	1302_SW113_240306	HDPE (no PTFE)	20 mL	00350822016113	Grey	No	
007	1302_SW114_240306	HDPE (no PTFE)	20 mL	00350822016033	Grey	No	
007	1302_SW114_240306	HDPE (no PTFE)	20 mL	00350822015769	Grey	No	
008	1302_SW115_240306	HDPE (no PTFE)	20 mL	00350822016038	Grey	No	
008	1302_SW115_240306	HDPE (no PTFE)	20 mL	00350822015938	Grey	No	
009	1302_SW168_240306	HDPE (no PTFE)	20 mL	00350822016540	Grey	No	
009	1302_SW168_240306	HDPE (no PTFE)	20 mL	00350822016595	Grey	No	
010	1302_SW120_240306	HDPE (no PTFE)	20 mL	00352309081815	Grey	No	
010	1302_SW120_240306	HDPE (no PTFE)	20 mL	00352309081885	Grey	No	
011	1302_SW124_240306	HDPE (no PTFE)	20 mL	00352309075285	Grey	No	
011	1302_SW124_240306	HDPE (no PTFE)	20 mL	00352309075276	Grey	No	
012	1302_SW125_240306	HDPE (no PTFE)	20 mL	00352309075244	Grey	No	
012	1302_SW125_240306	HDPE (no PTFE)	20 mL	00352309081824	Grey	No	
013	1302_SW132_240306	HDPE (no PTFE)	20 mL	00352309081899	Grey	No	
013	1302_SW132_240306	HDPE (no PTFE)	20 mL	00352309075495	Grey	No	

CHAIN OF CUSTODY

COC#: 64714 ALS Laboratory: ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU0030

EMAIL REPORTS 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:

014	1302_SW133_240306	HDPE (no PTFE)	20 mL	00352309075216	Grey	No	
014	1302_SW133_240306	HDPE (no PTFE)	20 mL	00352309081858	Grey	No	
015	1302_SW143_240306	HDPE (no PTFE)	20 mL	00352309075222	Grey	No	
015	1302_SW143_240306	HDPE (no PTFE)	20 mL	00352309081928	Grey	No	
016	1302_SW300_240306	HDPE (no PTFE)	20 mL	00350822015848	Grey	No	
016	1302_SW300_240306	HDPE (no PTFE)	20 mL	00350822015864	Grey	No	
017	1302_SW152_240306	HDPE (no PTFE)	20 mL	00352309075196	Grey	No	
017	1302_SW152_240306	HDPE (no PTFE)	20 mL	00352309075282	Grey	No	
018	1302_SW160_240306	HDPE (no PTFE)	20 mL	00352309075319	Grey	No	
018	1302_SW160_240306	HDPE (no PTFE)	20 mL	00352309081922	Grey	No	
019	1302_SW162_240306	HDPE (no PTFE)	20 mL	00352309081863	Grey	No	
019	1302_SW162_240306	HDPE (no PTFE)	20 mL	00352309081821	Grey	No	
020	1302_SW170_240306	HDPE (no PTFE)	20 mL	00352309081881	Grey	No	
020	1302_SW170_240306	HDPE (no PTFE)	20 mL	00352309081846	Grey	No	
021	1302_SW178_240306	HDPE (no PTFE)	20 mL	00352309081913	Grey	No	
021	1302_SW178_240306	HDPE (no PTFE)	20 mL	00352309081865	Grey	No	
022	1302_SW181_240306	HDPE (no PTFE)	20 mL	00352309075203	Grey	No	
022	1302_SW181_240306	HDPE (no PTFE)	20 mL	00352309075394	Grey	No	
023	1302_QC100_240306	HDPE (no PTFE)	20 mL	00352309075281	Grey	No	
023	1302_QC100_240306	HDPE (no PTFE)	20 mL	00352309081911	Grey	No	
024	1302_QC200_240306	HDPE (no PTFE)	20 mL	00352309081920	Grey	No	
024	1302_QC200_240306	HDPE (no PTFE)	20 mL	00352309081895	Grey	No	
025	1302_QC101_240306	HDPE (no PTFE)	20 mL	00350822015909	Grey	No	
025	1302_QC101_240306	HDPE (no PTFE)	20 mL	00350822016391	Grey	No	
026	1302_QC201_240306	HDPE (no PTFE)	20 mL	00350822015905	Grey	No	
026	1302_QC201_240306	HDPE (no PTFE)	20 mL	00350822016281	Grey	No	
027	1302_QC102_240306	HDPE (no PTFE)	20 mL	00350822016308	Grey	No	

CHAIN OF CUSTODY

COC#: 64714 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] DATE TIME: 8/3/24 1330

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE: / ES2019AECOMAU0030

EMAIL REPORTS 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:

027	1302_QC102_240306	HDPE (no PTFE)	20 mL	00350822016443	Grey	No	
028	1302_QC202_240306	HDPE (no PTFE)	20 mL	00350822016084	Grey	No	
028	1302_QC202_240306	HDPE (no PTFE)	20 mL	00350822016003	Grey	No	
029	1302_QC300_240306	HDPE (no PTFE)	20 mL	00350822015754	Grey	No	
029	1302_QC300_240306	HDPE (no PTFE)	20 mL	00350822015947	Grey	No	
030	1302_QC400_240306	HDPE (no PTFE)	20 mL	00350822016435	Grey	No	
030	1302_QC400_240306	HDPE (no PTFE)	20 mL	00350822016018	Grey	No	
031	1302_Q500_240306	HDPE (no PTFE)	20 mL	00350822016329	Grey	No	
031	1302_Q500_240306	HDPE (no PTFE)	20 mL	00350822016189	Grey	No	
032	1302_SW312_240306	HDPE (no PTFE)	20 mL	00352309075331	Grey	No	
032	1302_SW312_240306	HDPE (no PTFE)	20 mL	00352309075301	Grey	No	

Total Bottle Count: ALS: 64, Non ALS: 0

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

EMAIL REPORTS TO [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

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:			

Subcon / Forward Lab / Split WO

Lab / Analysis: ALS NMI

Organised By / Date:

Relinquished By / Date:

Connote / Courier: AC EWP

WO No: ES2337724

Attached By PO / Internal Sheet:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_MW215_231030		30/10/2023 03:59 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_MW297_231031		30/10/2023 05:04 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_MW303_231030		30/10/2023 04:19 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_MW133_231031		31/10/2023 08:43 AM	WATER	ALS: 2 Non ALS: 0	No	X		
005	1302_MW205_231031		31/10/2023 10:27 AM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_MW139_231030		30/10/2023 02:03 PM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_MW103_231030		30/10/2023 03:43 PM	WATER	ALS: 2 Non ALS: 0	No	X		

Environmental Division
Sydney
Work Order Reference
ES2337724

Telephone : +61-2-8784 8555

CHAIN OF CUSTODY

COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	1302_MW115_231031		31/10/2023 10:10 AM	WATER	ALS: 2 Non ALS: 0	No	X		
009	1302_MW107_231030		30/10/2023 06:29 PM	WATER	ALS: 2 Non ALS: 0	No	X		
010	1302_MW141_231030		30/10/2023 01:49 PM	WATER	ALS: 2 Non ALS: 0	No	X		
011	1302_MW144_231030		30/10/2023 01:27 PM	WATER	ALS: 2 Non ALS: 0	No	X		
012	1302_MW148_231030		30/10/2023 06:54 PM	WATER	ALS: 2 Non ALS: 0	No	X		
013	1302_MW156_231031		31/10/2023 10:52 AM	WATER	ALS: 2 Non ALS: 0	No	X		
014	1302_MW451_231030		30/10/2023 07:02 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
015	1302_MW452_231030		30/10/2023 06:47 PM	WATER	ALS: 2 Non ALS: 0	No	X		
016	1302_MW454_231031		31/10/2023 11:28 AM	WATER	ALS: 2 Non ALS: 0	No	X		
017	1302_MW185_231031		31/10/2023 02:37 PM	WATER	ALS: 2 Non ALS: 0	No	X		
018	1302_MW191_231031		31/10/2023 02:55 PM	WATER	ALS: 2 Non ALS: 0	No	X		
019	1302_MW190_231031		31/10/2023 03:10 PM	WATER	ALS: 2 Non ALS: 0	No	X		
020	1302_MW194_231031		31/10/2023 03:29 PM	WATER	ALS: 2 Non ALS: 0	No	X		
021	1302_MW195_231031		31/10/2023 03:22 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
022	1302_MW176_231031		31/10/2023 08:03 AM	WATER	ALS: 2 Non ALS: 0	No	X		
023	1302_MW180_231031		31/10/2023 01:34 PM	WATER	ALS: 2 Non ALS: 0	No	X		
024	1302_MW200_231031		31/10/2023 08:19 AM	WATER	ALS: 2 Non ALS: 0	No	X		
025	1302_MW209_231031		31/10/2023 02:08 PM	WATER	ALS: 2 Non ALS: 0	No	X		
026	1302_MW211_231031		31/10/2023 01:52 PM	WATER	ALS: 2 Non ALS: 0	No	X		
027	1302_MW210_231031		31/10/2023 03:57 PM	WATER	ALS: 2 Non ALS: 0	No	X		
~~028~~	1302_QC200_231030	Pls forward to NMI for analysis	30/10/2023 01:41 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
029	1302_QC300_231030		30/10/2023 10:44 AM	WATER	ALS: 2 Non ALS: 0	No	X		
030	1302_QC400_231030		30/10/2023 10:45 AM	WATER	ALS: 2 Non ALS: 0	No	X		
031	1302_QC500_231030		30/10/2023 10:47 AM	WATER	ALS: 2 Non ALS: 0	No	X		
032	1302_QC100_231030		30/10/2023 01:40 PM	WATER	ALS: 2 Non ALS: 0	No	X		
033	1302_QC101_231031		31/10/2023 08:08 AM	WATER	ALS: 2 Non ALS: 0	No	X		
~~034~~	1302_QC201_231031		31/10/2023 08:09 AM	WATER	ALS: 2 Non ALS: 0	No	X		
035	1302_QC301_231031		31/10/2023 09:44 AM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 2/11/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
036	1302_QC401_231031		31/10/2023 09:44 AM	WATER	ALS: 2 Non ALS: 0	No	X		
037	1302_QC501_231031		31/10/2023 09:45 AM	WATER	ALS: 2 Non ALS: 0	No	X		
~~038~~	1302_QC202_231031		31/10/2023 02:43 PM	WATER	ALS: 2 Non ALS: 0	No	X		
039	1302_QC102_231031		31/10/2023 02:45 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: 59290 ALS Laboratory: ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	[redacted]
DATE TIME:	DATE TIME:	DATE TIME:	2/4/23 1705

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS 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	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	1302_MW215_231030	HDPE (no PTFE)	20 mL	00350822022986	Grey	No	
001	1302_MW215_231030	HDPE (no PTFE)	20 mL	00350822023337	Grey	No	
002	1302_MW297_231031	HDPE (no PTFE)	20 mL	00350822023531	Grey	No	
002	1302_MW297_231031	HDPE (no PTFE)	20 mL	00350822023236	Grey	No	
003	1302_MW303_231030	HDPE (no PTFE)	20 mL	00350822023219	Grey	No	
003	1302_MW303_231030	HDPE (no PTFE)	20 mL	00350822023206	Grey	No	
004	1302_MW133_231031	HDPE (no PTFE)	20 mL	00350822023017	Grey	No	
004	1302_MW133_231031	HDPE (no PTFE)	20 mL	00350822023170	Grey	No	
005	1302_MW205_231031	HDPE (no PTFE)	20 mL	00350822023414	Grey	No	
005	1302_MW205_231031	HDPE (no PTFE)	20 mL	00350822023266	Grey	No	
006	1302_MW139_231030	HDPE (no PTFE)	20 mL	00350522026073	Grey	No	
006	1302_MW139_231030	HDPE (no PTFE)	20 mL	00350522026195	Grey	No	
007	1302_MW103_231030	HDPE (no PTFE)	20 mL	00351221009258	Grey	No	
007	1302_MW103_231030	HDPE (no PTFE)	20 mL	00351221009200	Grey	No	
008	1302_MW115_231031	HDPE (no PTFE)	20 mL	00350822057969	Grey	No	
008	1302_MW115_231031	HDPE (no PTFE)	20 mL	00350822057970	Grey	No	
009	1302_MW107_231030	HDPE (no PTFE)	20 mL	00350522025972	Grey	No	
009	1302_MW107_231030	HDPE (no PTFE)	20 mL	00350522026267	Grey	No	
010	1302_MW141_231030	HDPE (no PTFE)	20 mL	00350522026036	Grey	No	
010	1302_MW141_231030	HDPE (no PTFE)	20 mL	00350522026069	Grey	No	
011	1302_MW144_231030	HDPE (no PTFE)	20 mL	00350522026072	Grey	No	
011	1302_MW144_231030	HDPE (no PTFE)	20 mL	00350522026228	Grey	No	
012	1302_MW148_231030	HDPE (no PTFE)	20 mL	00350822083204	Grey	No	
012	1302_MW148_231030	HDPE (no PTFE)	20 mL	00350621037086	Grey	No	
013	1302_MW156_231031	HDPE (no PTFE)	20 mL	00350822082939	Grey	No	
013	1302_MW156_231031	HDPE (no PTFE)	20 mL	00350822083037	Grey	No	

CHAIN OF CUSTODY

ALS COC#: 59290 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	[redacted]
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 2/11/23 1705

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	1302_MW451_231030	HDPE (no PTFE)	20 mL	00350822023495	Grey	No	
014	1302_MW451_231030	HDPE (no PTFE)	20 mL	00350822023024	Grey	No	
015	1302_MW452_231030	HDPE (no PTFE)	20 mL	00350822023176	Grey	No	
015	1302_MW452_231030	HDPE (no PTFE)	20 mL	00350822023087	Grey	No	
016	1302_MW454_231031	HDPE (no PTFE)	20 mL	00350822022968	Grey	No	
016	1302_MW454_231031	HDPE (no PTFE)	20 mL	00350822022970	Grey	No	
017	1302_MW185_231031	HDPE (no PTFE)	20 mL	00350822023491	Grey	No	
017	1302_MW185_231031	HDPE (no PTFE)	20 mL	00350822023551	Grey	No	
018	1302_MW191_231031	HDPE (no PTFE)	20 mL	00350822023245	Grey	No	
018	1302_MW191_231031	HDPE (no PTFE)	20 mL	00350822023417	Grey	No	
019	1302_MW190_231031	HDPE (no PTFE)	20 mL	00350822023361	Grey	No	
019	1302_MW190_231031	HDPE (no PTFE)	20 mL	00350822023098	Grey	No	
020	1302_MW194_231031	HDPE (no PTFE)	20 mL	00350822023380	Grey	No	
020	1302_MW194_231031	HDPE (no PTFE)	20 mL	00350822023483	Grey	No	
021	1302_MW195_231031	HDPE (no PTFE)	20 mL	00350822023374	Grey	No	
021	1302_MW195_231031	HDPE (no PTFE)	20 mL	00350822023372	Grey	No	
022	1302_MW176_231031	HDPE (no PTFE)	20 mL	00350822023215	Grey	No	
022	1302_MW176_231031	HDPE (no PTFE)	20 mL	00350822023371	Grey	No	
023	1302_MW180_231031	HDPE (no PTFE)	20 mL	00350822023517	Grey	No	
023	1302_MW180_231031	HDPE (no PTFE)	20 mL	00350822023412	Grey	No	
024	1302_MW200_231031	HDPE (no PTFE)	20 mL	00350822023084	Grey	No	
024	1302_MW200_231031	HDPE (no PTFE)	20 mL	00350822023107	Grey	No	
025	1302_MW209_231031	HDPE (no PTFE)	20 mL	00350822083052	Grey	No	
025	1302_MW209_231031	HDPE (no PTFE)	20 mL	00350822082921	Grey	No	
026	1302_MW211_231031	HDPE (no PTFE)	20 mL	00350822023116	Grey	No	
026	1302_MW211_231031	HDPE (no PTFE)	20 mL	00350822023306	Grey	No	
027	1302_MW210_231031	HDPE (no PTFE)	20 mL	00350822023403	Grey	No	

CHAIN OF CUSTODY

(ALS) COC#: **59290** *ALS Laboratory:* ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_23

SITE: NT_1302_PFASOMP_23

ORDER NO: 60612561

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE: / ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 2/11/23 1705

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	1302_MW210_231031	HDPE (no PTFE)	20 mL	00350822023303	Grey	No	
028	1302_QC200_231030	HDPE (no PTFE)	20 mL	00351221009399	Grey	No	
028	1302_QC200_231030	HDPE (no PTFE)	20 mL	00351221009192	Grey	No	
029	1302_QC300_231030	HDPE (no PTFE)	20 mL	00350822023256	Grey	No	
029	1302_QC300_231030	HDPE (no PTFE)	20 mL	00350822023367	Grey	No	
030	1302_QC400_231030	HDPE (no PTFE)	20 mL	00350822082989	Grey	No	
030	1302_QC400_231030	HDPE (no PTFE)	20 mL	00350822083182	Grey	No	
031	1302_QC500_231030	HDPE (no PTFE)	20 mL	00351221009064	Grey	No	
031	1302_QC500_231030	HDPE (no PTFE)	20 mL	00350822061743	Grey	No	
032	1302_QC100_231030	HDPE (no PTFE)	20 mL	00350522026119	Grey	No	
032	1302_QC100_231030	HDPE (no PTFE)	20 mL	00350522025818	Grey	No	
033	1302_QC101_231031	HDPE (no PTFE)	20 mL	00350822023046	Grey	No	
033	1302_QC101_231031	HDPE (no PTFE)	20 mL	00350822023528	Grey	No	
034	1302_QC201_231031	HDPE (no PTFE)	20 mL	00350822023385	Grey	No	
034	1302_QC201_231031	HDPE (no PTFE)	20 mL	00350822023378	Grey	No	
035	1302_QC301_231031	HDPE (no PTFE)	20 mL	00350822023496	Grey	No	
035	1302_QC301_231031	HDPE (no PTFE)	20 mL	00350822023467	Grey	No	
036	1302_QC401_231031	HDPE (no PTFE)	20 mL	00350822023275	Grey	No	
036	1302_QC401_231031	HDPE (no PTFE)	20 mL	00350822082959	Grey	No	
037	1302_QC501_231031	HDPE (no PTFE)	20 mL	00350822022997	Grey	No	
037	1302_QC501_231031	HDPE (no PTFE)	20 mL	00350822083101	Grey	No	
038	1302_QC202_231031	HDPE (no PTFE)	20 mL	00350822023534	Grey	No	
038	1302_QC202_231031	HDPE (no PTFE)	20 mL	00350822023489	Grey	No	
039	1302_QC102_231031	HDPE (no PTFE)	20 mL	00350822023450	Grey	No	
039	1302_QC102_231031	HDPE (no PTFE)	20 mL	00350822023274	Grey	No	

Total Bottle Count: ALS: 78, Non ALS: 0

MP KOL

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

ALBURY/WODONGA 32 Shelley Street Sefton QLD 4870 Ph: 07 3243 7222 E: enviro.albury@alsglobal.com

BRISBANE 32 Shelley Street Sefton QLD 4870 Ph: 07 3243 7222 E: enviro.brisbane@alsglobal.com

GOLD COAST 46 Sallymandah Drive Ormeau QLD 4208 Ph: 07 5491 5688 E: enviro.goldcoast@alsglobal.com

MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: enviro.melbourne@alsglobal.com

NEWCASTLE 5 Rose Way Warabrook NSW 2304 Ph: 02 4968 9433 E: newcastle@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: enviro.perth@alsglobal.com

✓ SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Garbutt QLD 4814 Ph: 07 4796 0600 E: enviro.townsville@alsglobal.com

WAGGA WAGGA 2 Dalman Place Wagga Wagga NSW 2650 Ph: 02 6971 9696 E: enviro.wagga@alsglobal.com

CLIENT: AECOM	TURNAROUND REQUIREMENTS: ☑ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	FOR LABORATORY USE ONLY (Circle)	
OFFICE: [redacted]		Custody Seal Intact?	Yes / No / N/A
PROJECT: NT_1302_PFASOMP_23	ALS QUOTE NO.: EN149/23	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER: 60612561	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: [redacted]	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: [redacted]	SAMPLER MOBILE: [redacted]		
COC emailed to ALS? (YES / NO) Yes	EDD FORMAT (or default): Esdat		

[redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:
AECOM [redacted]		[redacted]
DATE/TIME: 09.11.23 12:00	DATE/TIME: 9/11/23 12:47pm	DATE/TIME: 10/11/23 0830

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).							Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	EP231X - PFAS							
1	1302_MW12B_23#109	09.11.23	W	1XPFAS	2	X							Extra Vol. for 196QC
2	1302_QC100_231109	"	"	"	2	X							
*	1302_QC200_231109	"	"	"	2	X							PLSFWD TO NM1
3	1302_QC300_231109	"	"	"	2	X							
4	1302_QC400_231109	"	"	"	2	X							
5	1302_QC500_231109	"	"	"	2	X							
				TOTAL									

LAB OF ORIGIN: DARWIN

Subcon / Forward Lab / Split WO
Lab / Analysis: NM1
Organised By / Date:
Relinquished By / Date:
Connote / Courier: QC FWD
WO No: ES2338712
Attach By PO / Internal Sheet:

Environmental Division Sydney
Work Order Reference
ES2338712

Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

CHAIN OF CUSTODY

ALS COC#: 64466 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER: [redacted]

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS TO [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY: [redacted]
DATE TIME:	DATE TIME:	DATE TIME: 8/3/24 1330

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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_MW215_240305		05/03/2024 05:27 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_MW297_240304		04/03/2024 04:43 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_MW303_240305		05/03/2024 04:56 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_MW422_240305		05/03/2024 04:35 PM	WATER	ALS: 2 Non ALS: 0	No	X		
005	1302_MW240_240304		05/03/2024 05:49 PM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_MW241_240305		05/03/2024 05:40 PM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_MW103_240305		05/03/2024 05:14 PM	WATER	ALS: 2 Non ALS: 0	No	X		

Subcon / Forward Lab / Split WO
Lab / Analysis: NMI
Organised By / Date:
Relinquished By / Date:
Connote / Courier: QC FWD
WO No: ES2407635
Attached By PO / Internal Sheet:

Environmental Division
Sydney
Work Order Reference
ES2407635

Telephone : + 61-2-8784 8555

CHAIN OF CUSTODY

(ALS) COC#: 64466 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS 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:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	1302_MW107_240305		05/03/2024 05:22 PM	WATER	ALS: 2 Non ALS: 0	No	X		
009	1302_MW128_240304		04/03/2024 04:16 PM	WATER	ALS: 2 Non ALS: 0	No	X		
010	1302_MW133_240304		04/03/2024 01:34 PM	WATER	ALS: 2 Non ALS: 0	No	X		
011	1302_MW139_240305		05/03/2024 04:30 PM	WATER	ALS: 2 Non ALS: 0	No	X		
012	1302_MW141_240305		05/03/2024 04:22 PM	WATER	ALS: 2 Non ALS: 0	No	X		
013	1302_MW144_240305		05/03/2024 04:07 PM	WATER	ALS: 2 Non ALS: 0	No	X		
014	1302_MW148_240305		05/03/2024 02:45 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 64466 ALS Laboratory: ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER: [redacted]

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
015	1302_MW451_240305		05/03/2024 02:56 PM	WATER	ALS: 2 Non ALS: 0	No	X		
016	1302_MW452_240305		05/03/2024 02:35 PM	WATER	ALS: 2 Non ALS: 0	No	X		
017	1302_MW454_240305		05/03/2024 04:42 PM	WATER	ALS: 2 Non ALS: 0	No	X		
018	1302_MW176_240305		05/03/2024 03:17 PM	WATER	ALS: 2 Non ALS: 0	No	X		
019	1302_MW160_240305		05/03/2024 03:45 PM	WATER	ALS: 2 Non ALS: 0	No	X		
020	1302_MW185_240305		05/03/2024 01:29 PM	WATER	ALS: 2 Non ALS: 0	No	X		
021	1302_MW191_240305		05/03/2024 01:39 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

(ALS) COC#: 64466 *ALS Laboratory:* ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
022	1302_MW190_240305		05/03/2024 01:47 PM	WATER	ALS: 2 Non ALS: 0	No	X		
023	1302_MW194_240305		05/03/2024 02:05 PM	WATER	ALS: 2 Non ALS: 0	No	X		
024	1302_MW195_240305		05/03/2024 01:55 PM	WATER	ALS: 2 Non ALS: 0	No	X		
025	1302_MW200_240305		05/03/2024 03:27 PM	WATER	ALS: 2 Non ALS: 0	No	X		
026	1302_MW209_240305		05/03/2024 03:05 PM	WATER	ALS: 2 Non ALS: 0	No	X		
027	1302_MW210_240305		05/03/2024 02:25 PM	WATER	ALS: 2 Non ALS: 0	No	X		
028	1302_MW211_240305		05/03/2024 03:35 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

(ALS) COC#: **64466** *ALS Laboratory:* ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS TO [redacted]

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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
029	1302_QC100_240305		05/03/2024 01:59 PM	WATER	ALS: 2 Non ALS: 0	No	X		
[redacted]	1302_QC200_240305	Forward to nmi pls	05/03/2024 01:59 PM	WATER	ALS: 2 Non ALS: 0	No	X		
031	1302_QC101_240305		05/03/2024 04:13 PM	WATER	ALS: 2 Non ALS: 0	No	X		
[redacted]	1302_QC201_240305	Forward to nmi pls	05/03/2024 04:14 PM	WATER	ALS: 2 Non ALS: 0	No	X		
033	1302_QC102_240305		05/03/2024 05:01 PM	WATER	ALS: 2 Non ALS: 0	No	X		
[redacted]	1302_QC202_240305		05/03/2024 05:02 PM	WATER	ALS: 2 Non ALS: 0	No	X		
035	1302_QC300_240305		07/03/2024 01:08 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 64466 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU0030

EMAIL REPORTS 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:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
036	1302_QC400_240305		07/03/2024 01:12 PM	WATER	ALS: 2 Non ALS: 0	No	X		
037	1302_QC500_240305		07/03/2024 01:12 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

ALS COC#: 64466 ALS Laboratory: ES Sydney Environmental

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

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

SAMPLER MOBILE:

QUOTE NO: SY/139/19 V3 / ES2019AECOMAU0030

EMAIL REPORTS 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	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	1302_MW215_240305	HDPE (no PTFE)	20 mL	00352309075339	Grey	No	
001	1302_MW215_240305	HDPE (no PTFE)	20 mL	00352309075270	Grey	No	
002	1302_MW297_240304	HDPE (no PTFE)	20 mL	00352309081875	Grey	No	
002	1302_MW297_240304	HDPE (no PTFE)	20 mL	00352309075563	Grey	No	
003	1302_MW303_240305	HDPE (no PTFE)	20 mL	00352309075213	Grey	No	
003	1302_MW303_240305	HDPE (no PTFE)	20 mL	00352309075262	Grey	No	
004	1302_MW422_240305	HDPE (no PTFE)	20 mL	00352309075279	Grey	No	
004	1302_MW422_240305	HDPE (no PTFE)	20 mL	00352309081944	Grey	No	
005	1302_MW240_240304	HDPE (no PTFE)	20 mL	00352309075366	Grey	No	
005	1302_MW240_240304	HDPE (no PTFE)	20 mL	00352309081877	Grey	No	
006	1302_MW241_240305	HDPE (no PTFE)	20 mL	00352309081869	Grey	No	
006	1302_MW241_240305	HDPE (no PTFE)	20 mL	00352309081940	Grey	No	
007	1302_MW103_240305	HDPE (no PTFE)	20 mL	00352309075218	Grey	No	
007	1302_MW103_240305	HDPE (no PTFE)	20 mL	00352309081861	Grey	No	
008	1302_MW107_240305	HDPE (no PTFE)	20 mL	00352309081836	Grey	No	
008	1302_MW107_240305	HDPE (no PTFE)	20 mL	00352309075506	Grey	No	
009	1302_MW128_240304	HDPE (no PTFE)	20 mL	00352309075221	Grey	No	
009	1302_MW128_240304	HDPE (no PTFE)	20 mL	00352309075309	Grey	No	
010	1302_MW133_240304	HDPE (no PTFE)	20 mL	00352309081867	Grey	No	
010	1302_MW133_240304	HDPE (no PTFE)	20 mL	00352309081915	Grey	No	
011	1302_MW139_240305	HDPE (no PTFE)	20 mL	00352309075467	Grey	No	
011	1302_MW139_240305	HDPE (no PTFE)	20 mL	00352309075454	Grey	No	
012	1302_MW141_240305	HDPE (no PTFE)	20 mL	00352309075364	Grey	No	
012	1302_MW141_240305	HDPE (no PTFE)	20 mL	00352309075371	Grey	No	
013	1302_MW144_240305	HDPE (no PTFE)	20 mL	00352309075463	Grey	No	
013	1302_MW144_240305	HDPE (no PTFE)	20 mL	00352309075338	Grey	No	

CHAIN OF CUSTODY

(ALS) COC#: 64466 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS 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:

014	1302_MW148_240305	HDPE (no PTFE)	20 mL	00352309075328	Grey	No	
014	1302_MW148_240305	HDPE (no PTFE)	20 mL	00352309075451	Grey	No	
015	1302_MW451_240305	HDPE (no PTFE)	20 mL	00352309081871	Grey	No	
015	1302_MW451_240305	HDPE (no PTFE)	20 mL	00352309081835	Grey	No	
016	1302_MW452_240305	HDPE (no PTFE)	20 mL	00352309075247	Grey	No	
016	1302_MW452_240305	HDPE (no PTFE)	20 mL	00352309075291	Grey	No	
017	1302_MW454_240305	HDPE (no PTFE)	20 mL	00352309075592	Grey	No	
017	1302_MW454_240305	HDPE (no PTFE)	20 mL	00352309075568	Grey	No	
018	1302_MW176_240305	HDPE (no PTFE)	20 mL	00352309075246	Grey	No	
018	1302_MW176_240305	HDPE (no PTFE)	20 mL	00352309075264	Grey	No	
019	1302_MW180_240305	HDPE (no PTFE)	20 mL	00352309075584	Grey	No	
019	1302_MW180_240305	HDPE (no PTFE)	20 mL	00352309075330	Grey	No	
020	1302_MW185_240305	HDPE (no PTFE)	20 mL	00352309075267	Grey	No	
020	1302_MW185_240305	HDPE (no PTFE)	20 mL	00352309075310	Grey	No	
021	1302_MW191_240305	HDPE (no PTFE)	20 mL	00352309075198	Grey	No	
021	1302_MW191_240305	HDPE (no PTFE)	20 mL	00352309075342	Grey	No	
022	1302_MW190_240305	HDPE (no PTFE)	20 mL	00352309075333	Grey	No	
022	1302_MW190_240305	HDPE (no PTFE)	20 mL	00352309075372	Grey	No	
023	1302_MW194_240305	HDPE (no PTFE)	20 mL	00352309081934	Grey	No	
023	1302_MW194_240305	HDPE (no PTFE)	20 mL	00352309075475	Grey	No	
024	1302_MW195_240305	HDPE (no PTFE)	20 mL	00352309075343	Grey	No	
024	1302_MW195_240305	HDPE (no PTFE)	20 mL	00352309075573	Grey	No	
025	1302_MW200_240305	HDPE (no PTFE)	20 mL	00352309081830	Grey	No	
025	1302_MW200_240305	HDPE (no PTFE)	20 mL	00352309075293	Grey	No	
026	1302_MW209_240305	HDPE (no PTFE)	20 mL	00352309075512	Grey	No	
026	1302_MW209_240305	HDPE (no PTFE)	20 mL	00352309081828	Grey	No	
027	1302_MW210_240305	HDPE (no PTFE)	20 mL	00352309075249	Grey	No	

CHAIN OF CUSTODY

ALS COC#: 64466 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: NT_1302_PFASOMP_24

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	[redacted]
DATE TIME:	DATE TIME:	DATE TIME:	8/3/24 1380

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	1302_MW210_240305	HDPE (no PTFE)	20 mL	00352309075406	Grey	No	
028	1302_MW211_240305	HDPE (no PTFE)	20 mL	00352309081954	Grey	No	
028	1302_MW211_240305	HDPE (no PTFE)	20 mL	00352309081809	Grey	No	
029	1302_QC100_240305	HDPE (no PTFE)	20 mL	00352309075403	Grey	No	
029	1302_QC100_240305	HDPE (no PTFE)	20 mL	00352309075204	Grey	No	
030	1302_QC200_240305	HDPE (no PTFE)	20 mL	00352309081893	Grey	No	
030	1302_QC200_240305	HDPE (no PTFE)	20 mL	00352309075517	Grey	No	
031	1302_QC101_240305	HDPE (no PTFE)	20 mL	00352309075369	Grey	No	
031	1302_QC101_240305	HDPE (no PTFE)	20 mL	00352309075242	Grey	No	
032	1302_QC201_240305	HDPE (no PTFE)	20 mL	00352309081854	Grey	No	
032	1302_QC201_240305	HDPE (no PTFE)	20 mL	00352309075200	Grey	No	
033	1302_QC102_240305	HDPE (no PTFE)	20 mL	00352309081842	Grey	No	
033	1302_QC102_240305	HDPE (no PTFE)	20 mL	00352309075259	Grey	No	
034	1302_QC202_240305	HDPE (no PTFE)	20 mL	00352309081850	Grey	No	
034	1302_QC202_240305	HDPE (no PTFE)	20 mL	00352309081862	Grey	No	
035	1302_QC300_240305	HDPE (no PTFE)	20 mL	00350822016045	Grey	No	
035	1302_QC300_240305	HDPE (no PTFE)	20 mL	00350822015765	Grey	No	
036	1302_QC400_240305	HDPE (no PTFE)	20 mL	00350822016525	Grey	No	
036	1302_QC400_240305	HDPE (no PTFE)	20 mL	00350822015818	Grey	No	
037	1302_QC500_240305	HDPE (no PTFE)	20 mL	00350822015817	Grey	No	
037	1302_QC500_240305	HDPE (no PTFE)	20 mL	00350822015836	Grey	No	

Total Bottle Count: ALS: 74, Non ALS: 0

CHAIN OF CUSTODY

(ALS) COC#: 65431 *ALS Laboratory:* ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY: [redacted]
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 26/3/24 0830

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: RAAF Base Darwin

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH:
QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:
/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	1302_MW453_240319		19/03/2024 01:21 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	1302_MW197_240319		22/03/2024 01:25 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	1302_MW115_240320		20/03/2024 01:25 PM	WATER	ALS: 2 Non ALS: 0	No	X		
004	1302_MW205_240320		20/03/2024 01:26 PM	WATER	ALS: 2 Non ALS: 0	No	X		
005	1302_MW156_240320		20/03/2024 01:27 PM	WATER	ALS: 2 Non ALS: 0	No	X		
006	1302_QC100_240320		20/03/2024 01:27 PM	WATER	ALS: 2 Non ALS: 0	No	X		
007	1302_QC200_240320	Pls forward to NMI	20/03/2024 01:30 PM	WATER	ALS: 2 Non ALS: 0	No	X		Pls forward to NMI

Subcon / Forward Lab / Split WO
Lab / Analysis: NMI
Organised By / Date:
Relinquished By / Date:
Connote / Courier: QC FWD
WO No: ES2409473
Attach By PC / External Sheet:

Environmental Division
Sydney
Work Order Reference
ES2409473

Telephone : +61-2-8784 8555

CHAIN OF CUSTODY

COC#: 65431 *ALS Laboratory:* ES Sydney Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	[redacted]
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME: 26/3/24 0836

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: RAAF Base Darwin

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE:

/ ES2019AECOMAU003 0

EMAIL REPORTS 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	PFAS Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	1302_QC300_240319		20/03/2024 01:31 PM	WATER	ALS: 2 Non ALS: 0	No	X		
009	1302_QC400_240319		22/03/2024 01:32 PM	WATER	ALS: 2 Non ALS: 0	No	X		
010	1302_QC500_240320		20/03/2024 01:32 PM	WATER	ALS: 2 Non ALS: 0	No	X		
011	1302_QC401_240320		20/03/2024 01:33 PM	WATER	ALS: 2 Non ALS: 0	No	X		
012	1302_QC301_240320		22/03/2024 01:33 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: 65431 ALS Laboratory: ES Sydney Environmental

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: NT_1302_PFASOMP_24

SITE: RAAF Base Darwin

ORDER NO: 60612561/4.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH:

QUOTE NO: SY/139/19 V3

SAMPLER MOBILE: / ES2019AECOMAU0030

EMAIL REPORTS TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	[redacted] 26/3/24 0830

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	1302_MW453_240319	HDPE (no PTFE)	20 mL	00350822083413	Grey	No	
001	1302_MW453_240319	HDPE (no PTFE)	20 mL	00350822083450	Grey	No	
002	1302_MW197_240319	HDPE (no PTFE)	20 mL	00350822083561	Grey	No	
002	1302_MW197_240319	HDPE (no PTFE)	20 mL	00350822083851	Grey	No	
003	1302_MW115_240320	HDPE (no PTFE)	20 mL	00350822083750	Grey	No	
003	1302_MW115_240320	HDPE (no PTFE)	20 mL	00350822083805	Grey	No	
004	1302_MW205_240320	HDPE (no PTFE)	20 mL	00350822083329	Grey	No	
004	1302_MW205_240320	HDPE (no PTFE)	20 mL	00350822083436	Grey	No	
005	1302_MW156_240320	HDPE (no PTFE)	20 mL	00350822083226	Grey	No	
005	1302_MW156_240320	HDPE (no PTFE)	20 mL	00350822083497	Grey	No	
006	1302_QC100_240320	HDPE (no PTFE)	20 mL	00350822083744	Grey	No	
006	1302_QC100_240320	HDPE (no PTFE)	20 mL	00350822083791	Grey	No	
007	1302_QC200_240320	HDPE (no PTFE)	20 mL	00350822083798	Grey	No	
007	1302_QC200_240320	HDPE (no PTFE)	20 mL	00350822083564	Grey	No	
008	1302_QC300_240319	HDPE (no PTFE)	20 mL	00350822016202	Grey	No	
008	1302_QC300_240319	HDPE (no PTFE)	20 mL	00350822016311	Grey	No	
009	1302_QC400_240319	HDPE (no PTFE)	20 mL	00350822015900	Grey	No	
009	1302_QC400_240319	HDPE (no PTFE)	20 mL	00350822015785	Grey	No	
010	1302_QC500_240320	HDPE (no PTFE)	20 mL	00350822016005	Grey	No	
010	1302_QC500_240320	HDPE (no PTFE)	20 mL	00350822015861	Grey	No	
011	1302_QC401_240320	HDPE (no PTFE)	20 mL	00350822015751	Grey	No	
011	1302_QC401_240320	HDPE (no PTFE)	20 mL	00350822016077	Grey	No	
012	1302_QC301_240320	HDPE (no PTFE)	20 mL	00350822015957	Grey	No	
012	1302_QC301_240320	HDPE (no PTFE)	20 mL	00350822016154	Grey	No	

Total Bottle Count: ALS: 24, Non ALS: 0

Appendix F

Lab Reports

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2337477**

Client	: [redacted]	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: + [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_23	Page	: 1 of 7
Order number	: ----	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 31-Oct-2023 09:41	Issue Date	: 06-Nov-2023
Client Requested Due Date	: 04-Dec-2023	Scheduled Reporting Date	: **04-Dec-2023**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 1.4, 8.9, 5.8'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 59 / 59

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
- **Samples QC201, QC202, QC203 and QC204 have been forwarded to NMI.**
- **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 direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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.

Method / Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS : EP231X		
1302_BIOAFA315_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA316_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA317_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA318_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA319_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA320_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA321_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA322_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA323_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA324_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA325_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA326_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA327_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA328_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA329_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA330_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA331_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA332_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA333_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA334_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA335_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA336_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA337_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA338_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA339_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA340_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA341_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA342_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA343_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA344_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA345_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA346_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA347_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA348_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA349_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA350_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA351_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA352_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA353_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA354_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA355_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA356_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA357_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA358_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA359_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA360_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA361_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA362_231025	- Snap Lock Bag	- Frozen Sample
1302_QC148_231017	- Snap Lock Bag	- Frozen Sample
1302_QC149_231017	- Snap Lock Bag	- Frozen Sample
1302_QC150_231017	- Snap Lock Bag	- Frozen Sample
1302_QC151_231017	- Snap Lock Bag	- Frozen Sample
1302_QC152_231018	- Snap Lock Bag	- Frozen Sample
1302_QC153_231018	- Snap Lock Bag	- Frozen Sample
1302_QC154_231018	- Snap Lock Bag	- Frozen Sample
1302_QC155_231018	- Snap Lock Bag	- Frozen Sample
PFOS - Linear/Branched Speciation : EP231-PFOS-SP		
1302_BIOAFA315_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA316_231017	- Snap Lock Bag	- Frozen Sample

Method *Sample ID*	Sample Container Received	Preferred Sample Container for Analysis
PFOS - Linear/Branched Speciation : EP231-PFOS-SP		
1302_BIOAFA317_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA318_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA319_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA320_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA321_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA322_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA323_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA324_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA325_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA326_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA327_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA328_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA329_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA330_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA331_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA332_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA333_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA334_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA335_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA336_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA337_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA338_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA339_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA340_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA341_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA342_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA343_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA344_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA345_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA346_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA347_231018	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA348_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA349_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA350_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA351_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA352_231017	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA353_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA354_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA355_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA356_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA357_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA358_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA359_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA360_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA361_231025	- Snap Lock Bag	- Frozen Sample
1302_BIOAFA362_231025	- Snap Lock Bag	- Frozen Sample
1302_QC148_231017	- Snap Lock Bag	- Frozen Sample
1302_QC149_231017	- Snap Lock Bag	- Frozen Sample
1302_QC150_231017	- Snap Lock Bag	- Frozen Sample
1302_QC151_231017	- Snap Lock Bag	- Frozen Sample
1302_QC152_231018	- Snap Lock Bag	- Frozen Sample
1302_QC153_231018	- Snap Lock Bag	- Frozen Sample
1302_QC154_231018	- Snap Lock Bag	- Frozen Sample
1302_QC155_231018	- Snap Lock Bag	- Frozen Sample

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

ES2337477-001 : [17-Oct-2023] : 1302_BIOAFA315_231017
ES2337477-002 : [17-Oct-2023] : 1302_BIOAFA316_231017
ES2337477-003 : [17-Oct-2023] : 1302_BIOAFA317_231017
ES2337477-004 : [17-Oct-2023] : 1302_BIOAFA318_231017
ES2337477-005 : [17-Oct-2023] : 1302_BIOAFA319_231017

ES2337477-006	: [17-Oct-2023]	: 1302_BIOAFA320_231017
ES2337477-007	: [17-Oct-2023]	: 1302_BIOAFA321_231017
ES2337477-008	: [17-Oct-2023]	: 1302_BIOAFA322_231017
ES2337477-009	: [17-Oct-2023]	: 1302_BIOAFA323_231017
ES2337477-010	: [17-Oct-2023]	: 1302_BIOAFA324_231017
ES2337477-011	: [17-Oct-2023]	: 1302_BIOAFA325_231017
ES2337477-012	: [17-Oct-2023]	: 1302_BIOAFA326_231017
ES2337477-013	: [17-Oct-2023]	: 1302_BIOAFA327_231017
ES2337477-014	: [17-Oct-2023]	: 1302_BIOAFA328_231017
ES2337477-015	: [17-Oct-2023]	: 1302_BIOAFA329_231017
ES2337477-016	: [17-Oct-2023]	: 1302_BIOAFA330_231017
ES2337477-017	: [18-Oct-2023]	: 1302_BIOAFA331_231018
ES2337477-018	: [18-Oct-2023]	: 1302_BIOAFA332_231018
ES2337477-019	: [18-Oct-2023]	: 1302_BIOAFA333_231018
ES2337477-020	: [18-Oct-2023]	: 1302_BIOAFA334_231018
ES2337477-021	: [18-Oct-2023]	: 1302_BIOAFA335_231018
ES2337477-022	: [18-Oct-2023]	: 1302_BIOAFA336_231018
ES2337477-023	: [18-Oct-2023]	: 1302_BIOAFA337_231018
ES2337477-024	: [18-Oct-2023]	: 1302_BIOAFA338_231018
ES2337477-025	: [18-Oct-2023]	: 1302_BIOAFA339_231018
ES2337477-026	: [18-Oct-2023]	: 1302_BIOAFA340_231018
ES2337477-027	: [18-Oct-2023]	: 1302_BIOAFA341_231018
ES2337477-028	: [18-Oct-2023]	: 1302_BIOAFA342_231018
ES2337477-029	: [18-Oct-2023]	: 1302_BIOAFA343_231018
ES2337477-030	: [18-Oct-2023]	: 1302_BIOAFA344_231018
ES2337477-031	: [18-Oct-2023]	: 1302_BIOAFA345_231018
ES2337477-032	: [18-Oct-2023]	: 1302_BIOAFA346_231018
ES2337477-033	: [18-Oct-2023]	: 1302_BIOAFA347_231018
ES2337477-034	: [17-Oct-2023]	: 1302_BIOAFA348_231017
ES2337477-035	: [17-Oct-2023]	: 1302_BIOAFA349_231017
ES2337477-036	: [17-Oct-2023]	: 1302_BIOAFA350_231017
ES2337477-037	: [17-Oct-2023]	: 1302_BIOAFA351_231017
ES2337477-038	: [17-Oct-2023]	: 1302_BIOAFA352_231017
ES2337477-039	: [25-Oct-2023]	: 1302_BIOAFA353_231025
ES2337477-040	: [25-Oct-2023]	: 1302_BIOAFA354_231025
ES2337477-041	: [25-Oct-2023]	: 1302_BIOAFA355_231025
ES2337477-042	: [25-Oct-2023]	: 1302_BIOAFA356_231025
ES2337477-043	: [25-Oct-2023]	: 1302_BIOAFA357_231025
ES2337477-044	: [25-Oct-2023]	: 1302_BIOAFA358_231025
ES2337477-045	: [25-Oct-2023]	: 1302_BIOAFA359_231025
ES2337477-046	: [25-Oct-2023]	: 1302_BIOAFA360_231025
ES2337477-047	: [25-Oct-2023]	: 1302_BIOAFA361_231025
ES2337477-048	: [25-Oct-2023]	: 1302_BIOAFA362_231025

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: **BIOTA**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	BIOTA - EP231X PFAS - Full Suite (28 analytes) - includes PFOS
ES2337477-001	17-Oct-2023 00:00	1302_BIOAFA315_231017	✓
ES2337477-002	17-Oct-2023 00:00	1302_BIOAFA316_231017	✓
ES2337477-003	17-Oct-2023 00:00	1302_BIOAFA317_231017	✓
ES2337477-004	17-Oct-2023 00:00	1302_BIOAFA318_231017	✓
ES2337477-005	17-Oct-2023 00:00	1302_BIOAFA319_231017	✓
ES2337477-006	17-Oct-2023 00:00	1302_BIOAFA320_231017	✓
ES2337477-007	17-Oct-2023 00:00	1302_BIOAFA321_231017	✓
ES2337477-008	17-Oct-2023 00:00	1302_BIOAFA322_231017	✓
ES2337477-009	17-Oct-2023 00:00	1302_BIOAFA323_231017	✓
ES2337477-010	17-Oct-2023 00:00	1302_BIOAFA324_231017	✓
ES2337477-011	17-Oct-2023 00:00	1302_BIOAFA325_231017	✓
ES2337477-012	17-Oct-2023 00:00	1302_BIOAFA326_231017	✓
ES2337477-013	17-Oct-2023 00:00	1302_BIOAFA327_231017	✓
ES2337477-014	17-Oct-2023 00:00	1302_BIOAFA328_231017	✓
ES2337477-015	17-Oct-2023 00:00	1302_BIOAFA329_231017	✓
ES2337477-016	17-Oct-2023 00:00	1302_BIOAFA330_231017	✓
ES2337477-017	18-Oct-2023 00:00	1302_BIOAFA331_231018	✓
ES2337477-018	18-Oct-2023 00:00	1302_BIOAFA332_231018	✓
ES2337477-019	18-Oct-2023 00:00	1302_BIOAFA333_231018	✓
ES2337477-020	18-Oct-2023 00:00	1302_BIOAFA334_231018	✓
ES2337477-021	18-Oct-2023 00:00	1302_BIOAFA335_231018	✓
ES2337477-022	18-Oct-2023 00:00	1302_BIOAFA336_231018	✓
ES2337477-023	18-Oct-2023 00:00	1302_BIOAFA337_231018	✓
ES2337477-024	18-Oct-2023 00:00	1302_BIOAFA338_231018	✓
ES2337477-025	18-Oct-2023 00:00	1302_BIOAFA339_231018	✓
ES2337477-026	18-Oct-2023 00:00	1302_BIOAFA340_231018	✓
ES2337477-027	18-Oct-2023 00:00	1302_BIOAFA341_231018	✓
ES2337477-028	18-Oct-2023 00:00	1302_BIOAFA342_231018	✓
ES2337477-029	18-Oct-2023 00:00	1302_BIOAFA343_231018	✓
ES2337477-030	18-Oct-2023 00:00	1302_BIOAFA344_231018	✓
ES2337477-031	18-Oct-2023 00:00	1302_BIOAFA345_231018	✓
ES2337477-032	18-Oct-2023 00:00	1302_BIOAFA346_231018	✓
ES2337477-033	18-Oct-2023 00:00	1302_BIOAFA347_231018	✓
ES2337477-034	17-Oct-2023 00:00	1302_BIOAFA348_231017	✓
ES2337477-035	17-Oct-2023 00:00	1302_BIOAFA349_231017	✓
ES2337477-036	17-Oct-2023 00:00	1302_BIOAFA350_231017	✓
ES2337477-037	17-Oct-2023 00:00	1302_BIOAFA351_231017	✓
ES2337477-038	17-Oct-2023 00:00	1302_BIOAFA352_231017	✓
ES2337477-039	25-Oct-2023 00:00	1302_BIOAFA353_231025	✓
ES2337477-040	25-Oct-2023 00:00	1302_BIOAFA354_231025	✓
ES2337477-041	25-Oct-2023 00:00	1302_BIOAFA355_231025	✓

			BIOTA - EP231X PFAS - Full Suite (28 analytes) - includes PFOS
ES2337477-042	25-Oct-2023 00:00	1302_BIOAFA356_231025	✓
ES2337477-043	25-Oct-2023 00:00	1302_BIOAFA357_231025	✓
ES2337477-044	25-Oct-2023 00:00	1302_BIOAFA358_231025	✓
ES2337477-045	25-Oct-2023 00:00	1302_BIOAFA359_231025	✓
ES2337477-046	25-Oct-2023 00:00	1302_BIOAFA360_231025	✓
ES2337477-047	25-Oct-2023 00:00	1302_BIOAFA361_231025	✓
ES2337477-048	25-Oct-2023 00:00	1302_BIOAFA362_231025	✓
ES2337477-049	17-Oct-2023 00:00	1302_QC148_231017	✓
ES2337477-050	17-Oct-2023 00:00	1302_QC149_231017	✓
ES2337477-051	17-Oct-2023 00:00	1302_QC150_231017	✓
ES2337477-052	17-Oct-2023 00:00	1302_QC151_231017	✓
ES2337477-053	18-Oct-2023 00:00	1302_QC152_231018	✓
ES2337477-054	18-Oct-2023 00:00	1302_QC153_231018	✓
ES2337477-055	18-Oct-2023 00:00	1302_QC154_231018	✓
ES2337477-056	18-Oct-2023 00:00	1302_QC155_231018	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
ES2337477-057	19-Oct-2023 00:00	1302_QC304_231019	✓
ES2337477-058	27-Oct-2023 00:00	1302_QC504_231027	✓
ES2337477-059	19-Oct-2023 00:00	1302_QC505_231019	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2337477**	Page	: 1 of 39
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: +[redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 31-Oct-2023 09:41
Order number	: 60612561/3.1	Date Analysis Commenced	: 07-Nov-2023
C-O-C number	: ----	Issue Date	: 01-Dec-2023 15:40
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 59		
No. of samples analysed	: 59		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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.

- EP231: Poor matrix spike recovery due to matrix interferences(confirmed by re-analysis).
- 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 (Biota): ALS NATA accreditation for PFAS in Biota covers all Perfluoroalkyl Sulfonic Acids, Perfluoroalkyl Carboxylic Acids and (n:2) Fluorotelomer Sulfonic Acids in fish (whole and muscle), plants and vegetable matrices, with the exception PFBA (fish only), EtFOSA, MeFOSE, EtFOSE, MeFOSAA, EtFOSAA.
- 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: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA315_231017	1302_BIOAFA316_231017	1302_BIOAFA317_231017	1302_BIOAFA318_231017	1302_BIOAFA319_231017
			Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-001	ES2337477-002	ES2337477-003	ES2337477-004	ES2337477-005
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	fish fillet	fish fillet	fish fillet	fish fillet	fish fillet
ø Weight of Sample Prepared	----	0.1	g	162	81.5	78.6	66.3	55.6
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	2	<1	1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	3	<1	1	<1	<1
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA315_231017	1302_BIOAFA316_231017	1302_BIOAFA317_231017	1302_BIOAFA318_231017	1302_BIOAFA319_231017
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-001	ES2337477-002	ES2337477-003	ES2337477-004	ES2337477-005
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ Sum of PFAS	----	1	µg/kg		**3**	<1	**1**	<1	<1
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**77.0**	**95.6**	**89.4**	**78.3**	**94.8**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA315_231017	1302_BIOAFA316_231017	1302_BIOAFA317_231017	1302_BIOAFA318_231017	1302_BIOAFA319_231017
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-001	ES2337477-002	ES2337477-003	ES2337477-004	ES2337477-005
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**77.6**	**74.6**	**75.8**	**82.2**	**77.0**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA320_231017	1302_BIOAFA321_231017	1302_BIOAFA322_231017	1302_BIOAFA323_231017	1302_BIOAFA324_231017
			Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-006	ES2337477-007	ES2337477-008	ES2337477-009	ES2337477-010
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	fish fillet	fish fillet	fish fillet	fish fillet	fish fillet
ø Weight of Sample Prepared	----	0.1	g	58.1	71.6	46.8	75.1	96.6
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	<1	1	10	6	2
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	<1	1	1	1	<1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	2	11	7	2
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	<1	<1	2
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA320_231017	1302_BIOAFA321_231017	1302_BIOAFA322_231017	1302_BIOAFA323_231017	1302_BIOAFA324_231017
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-006	ES2337477-007	ES2337477-008	ES2337477-009	ES2337477-010
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ **Sum of PFAS**	----	1	µg/kg		<1	**2**	**11**	**7**	**4**
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**86.6**	**81.0**	**88.0**	**107**	**89.6**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA320_231017	1302_BIOAFA321_231017	1302_BIOAFA322_231017	1302_BIOAFA323_231017	1302_BIOAFA324_231017
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-006	ES2337477-007	ES2337477-008	ES2337477-009	ES2337477-010
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**79.6**	**77.2**	**72.2**	**79.6**	**78.6**

Analytical Results

Sub-Matrix: BIOTA
(Matrix: BIOTA)

Compound	CAS Number	LOR	Unit	Sample ID	1302_BIOAFA325_231017	1302_BIOAFA326_231017	1302_BIOAFA327_231017	1302_BIOAFA328_231017	1302_BIOAFA329_231017
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
					ES2337477-011	ES2337477-012	ES2337477-013	ES2337477-014	ES2337477-015
					Result	Result	Result	Result	Result
Biota Sample Pre-Preparation									
ø Sample Description	----	-	--		fish fillet	fish fillet	fish fillet	Crab	Crab
ø Weight of Sample Prepared	----	0.1	g		61.4	50.2	45.5	35.0	43.2
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg		<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg		<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg		<1	<1	<1	2	3
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg		<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg		<1	<1	<1	1	2
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg		<1	<1	<1	1	<1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg		<1	<1	<1	2	2
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg		<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg		<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg		<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg		<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg		<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg		<1	<1	<1	1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg		<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg		<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg		<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg		<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA325_231017	1302_BIOAFA326_231017	1302_BIOAFA327_231017	1302_BIOAFA328_231017	1302_BIOAFA329_231017
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-011	ES2337477-012	ES2337477-013	ES2337477-014	ES2337477-015
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ Sum of PFAS	----	1	µg/kg		<1	<1	<1	**5**	**5**
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**99.7**	**89.6**	**106**	**95.8**	**100**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA325_231017	1302_BIOAFA326_231017	1302_BIOAFA327_231017	1302_BIOAFA328_231017	1302_BIOAFA329_231017
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-011	ES2337477-012	ES2337477-013	ES2337477-014	ES2337477-015
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**86.8**	**87.6**	**80.0**	**81.4**	**81.4**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA330_231017	1302_BIOAFA331_231018	1302_BIOAFA332_231018	1302_BIOAFA333_231018	1302_BIOAFA334_231018
			Sampling date / time	17-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-016	ES2337477-017	ES2337477-018	ES2337477-019	ES2337477-020
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	Crab	fish fillet	fish fillet	fish fillet	fillet
ø Weight of Sample Prepared	----	0.1	g	46.4	63.3	71.2	82.3	52.0
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	3	<1	1	1	3
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	1	3	6	12	14
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	<1	<1	<1	2	3
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	1	3	6	14	17
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA330_231017	1302_BIOAFA331_231018	1302_BIOAFA332_231018	1302_BIOAFA333_231018	1302_BIOAFA334_231018
				Sampling date / time	17-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-016	ES2337477-017	ES2337477-018	ES2337477-019	ES2337477-020
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ **Sum of PFAS**	----	1	µg/kg		**4**	**3**	**7**	**15**	**20**
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**91.1**	**89.2**	**87.5**	**92.4**	**106**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA330_231017	1302_BIOAFA331_231018	1302_BIOAFA332_231018	1302_BIOAFA333_231018	1302_BIOAFA334_231018
				Sampling date / time	17-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-016	ES2337477-017	ES2337477-018	ES2337477-019	ES2337477-020
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**84.9**	**80.4**	**80.4**	**73.8**	**97.9**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA335_231018	1302_BIOAFA336_231018	1302_BIOAFA337_231018	1302_BIOAFA338_231018	1302_BIOAFA339_231018
			Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-021	ES2337477-022	ES2337477-023	ES2337477-024	ES2337477-025
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	fillet	fillet	fillet	fillet	fillet
ø Weight of Sample Prepared	----	0.1	g	50.0	38.0	43.0	64.0	45.0
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	24	43	81	11	6
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	1	3	3	2	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	25	46	84	13	7
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA335_231018	1302_BIOAFA336_231018	1302_BIOAFA337_231018	1302_BIOAFA338_231018	1302_BIOAFA339_231018
				Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-021	ES2337477-022	ES2337477-023	ES2337477-024	ES2337477-025
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ **Sum of PFAS**	----	1	µg/kg		**25**	**46**	**84**	**13**	**7**
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**88.4**	**91.4**	**106**	**100**	**87.6**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA335_231018	1302_BIOAFA336_231018	1302_BIOAFA337_231018	1302_BIOAFA338_231018	1302_BIOAFA339_231018
				Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-021	ES2337477-022	ES2337477-023	ES2337477-024	ES2337477-025
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**96.4**	**96.8**	**96.6**	**107**	**95.6**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA340_231018	1302_BIOAFA341_231018	1302_BIOAFA342_231018	1302_BIOAFA343_231018	1302_BIOAFA344_231018
			Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-026	ES2337477-027	ES2337477-028	ES2337477-029	ES2337477-030
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	fillet	fillet	fillet	fillet	fillet
ø Weight of Sample Prepared	----	0.1	g	39.0	42.0	65.0	82.0	57.0
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	<1	<1	2
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	3	5	2	1	12
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	1	<1	<1	<1	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	4	5	2	1	13
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA340_231018	1302_BIOAFA341_231018	1302_BIOAFA342_231018	1302_BIOAFA343_231018	1302_BIOAFA344_231018
				Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-026	ES2337477-027	ES2337477-028	ES2337477-029	ES2337477-030
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ **Sum of PFAS**	----	1	µg/kg		**4**	**5**	**2**	**1**	**15**
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**92.9**	**93.2**	**97.2**	**103**	**90.2**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA340_231018	1302_BIOAFA341_231018	1302_BIOAFA342_231018	1302_BIOAFA343_231018	1302_BIOAFA344_231018
				Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-026	ES2337477-027	ES2337477-028	ES2337477-029	ES2337477-030
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**95.0**	**97.8**	**96.6**	**93.4**	**97.4**

Analytical Results

Sub-Matrix: BIOTA
(Matrix: BIOTA)

Compound	CAS Number	LOR	Unit	Sample ID	1302_BIOAFA345_231018	1302_BIOAFA346_231018	1302_BIOAFA347_231018	1302_BIOAFA348_231017	1302_BIOAFA349_231017
				Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
					ES2337477-031	ES2337477-032	ES2337477-033	ES2337477-034	ES2337477-035
					Result	Result	Result	Result	Result
Biota Sample Pre-Preparation									
ø Sample Description	----	-	--		fillet	fillet	fillet	snail	snail
ø Weight of Sample Prepared	----	0.1	g		56.0	45.0	40.0	83.0	71.0
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg		<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg		<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg		<1	<1	<1	<1	<1
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg		<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg		<1	<1	<1	7	11
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg		<1	<1	<1	1	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg		<1	<1	<1	8	12
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg		<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg		<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg		<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg		<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg		<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg		<1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg		<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg		<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg		<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg		<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA345_231018	1302_BIOAFA346_231018	1302_BIOAFA347_231018	1302_BIOAFA348_231017	1302_BIOAFA349_231017
				Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-031	ES2337477-032	ES2337477-033	ES2337477-034	ES2337477-035
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ **Sum of PFAS**	----	1	µg/kg		<1	<1	<1	**8**	**12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**88.4**	**106**	**89.9**	**98.5**	**99.2**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA345_231018	1302_BIOAFA346_231018	1302_BIOAFA347_231018	1302_BIOAFA348_231017	1302_BIOAFA349_231017
				Sampling date / time	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-031	ES2337477-032	ES2337477-033	ES2337477-034	ES2337477-035
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**107**	**99.1**	**97.3**	**96.6**	**98.8**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA350_231017	1302_BIOAFA351_231017	1302_BIOAFA352_231017	1302_BIOAFA353_231025	1302_BIOAFA354_231025
			Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-036	ES2337477-037	ES2337477-038	ES2337477-039	ES2337477-040
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	snail	snail	snail	prawn	prawn
ø Weight of Sample Prepared	----	0.1	g	47.0	51.0	55.0	24.8	18.3
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	1	<1	<1	20	8
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	15	14	17	48	18
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	1	2	1	10	5
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	16	16	18	58	23
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	9	4	7	1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA350_231017	1302_BIOAFA351_231017	1302_BIOAFA352_231017	1302_BIOAFA353_231025	1302_BIOAFA354_231025
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-036	ES2337477-037	ES2337477-038	ES2337477-039	ES2337477-040
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	5	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ Sum of PFAS	----	1	µg/kg		26	20	30	80	31
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		79.8	89.6	86.0	91.2	96.2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA350_231017	1302_BIOAFA351_231017	1302_BIOAFA352_231017	1302_BIOAFA353_231025	1302_BIOAFA354_231025
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-036	ES2337477-037	ES2337477-038	ES2337477-039	ES2337477-040
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**95.1**	**97.8**	**95.2**	**105**	**97.8**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA355_231025	1302_BIOAFA356_231025	1302_BIOAFA357_231025	1302_BIOAFA358_231025	1302_BIOAFA359_231025
			Sampling date / time	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-041	ES2337477-042	ES2337477-043	ES2337477-044	ES2337477-045
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	prawn	prawn	prawn	prawn	prawn
ø Weight of Sample Prepared	----	0.1	g	15.4	26.9	32.7	20.2	28.8
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	16	12	8	7	50
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	1	<1	<1	<1	8
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	33	34	36	17	234
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	9	7	7	3	136
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	42	41	43	20	370
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA355_231025	1302_BIOAFA356_231025	1302_BIOAFA357_231025	1302_BIOAFA358_231025	1302_BIOAFA359_231025
			Sampling date / time	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-041	ES2337477-042	ES2337477-043	ES2337477-044	ES2337477-045
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg	<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg	<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg	<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	<2	<2	<2
EP231P: PFAS Sums								
^ Sum of PFAS	----	1	µg/kg	**59**	**54**	**51**	**27**	**428**
EP231S: PFAS Surrogate								
13C4-PFOS	----	1	%	**89.8**	**100**	**90.4**	**84.8**	**97.2**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA355_23102025	1302_BIOAFA356_23102025	1302_BIOAFA357_23102025	1302_BIOAFA358_23102025	1302_BIOAFA359_23102025
				Sampling date / time	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-041	ES2337477-042	ES2337477-043	ES2337477-044	ES2337477-045
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**97.9**	**96.2**	**96.0**	**94.0**	**94.5**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_BIOAFA360_231025	1302_BIOAFA361_231025	1302_BIOAFA362_231025	1302_QC148_231017	1302_QC149_231017
			Sampling date / time	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-046	ES2337477-047	ES2337477-048	ES2337477-049	ES2337477-050
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	prawn	prawn	prawn	fillet	fillet
ø Weight of Sample Prepared	----	0.1	g	22.5	21.3	23.1	71.5	59.8
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	11	15	5	<1	<1
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	18	46	12	2	1
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	6	13	3	<1	1
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	24	59	15	2	2
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA360_231025	1302_BIOAFA361_231025	1302_BIOAFA362_231025	1302_QC148_231017	1302_QC149_231017
				Sampling date / time	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-046	ES2337477-047	ES2337477-048	ES2337477-049	ES2337477-050
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	<2	<2	<2	<2
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	<2	**4**	<2	<2
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	<2	<2	<2	<2
EP231P: PFAS Sums									
^ **Sum of PFAS**	----	1	µg/kg		**36**	**75**	**24**	**2**	**2**
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**88.1**	**87.8**	**104**	**92.8**	**93.9**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_BIOAFA360_231025	1302_BIOAFA361_231025	1302_BIOAFA362_231025	1302_QC148_231017	1302_QC149_231017
				Sampling date / time	25-Oct-2023 00:00	25-Oct-2023 00:00	25-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2337477-046	ES2337477-047	ES2337477-048	ES2337477-049	ES2337477-050
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C8-PFOA	----	1	%		**97.2**	**98.2**	**99.2**	**104**	**96.5**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_QC150_231017	1302_QC151_231017	1302_QC152_231018	1302_QC153_231018	1302_QC154_231018
			Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-051	ES2337477-052	ES2337477-053	ES2337477-054	ES2337477-055
				Result	Result	Result	Result	Result
Biota Sample Pre-Preparation								
ø Sample Description	----	-	--	fillet	fillet	fillet	fillet	fillet
ø Weight of Sample Prepared	----	0.1	g	50.8	65.7	59.2	45.8	41.1
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	<1	<1	<1
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	<1	<1	2
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg	1	<1	4	4	10
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg	<1	<1	1	1	2
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	1	<1	5	5	12
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg	<2	<2	<2	<2	<2
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	<5	<5	<5
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg	<2	<2	<2	<2	<2
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	<1	<1	<1
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	<1	<1	<1
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	<1	<1	<1
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	<1	<1	<1
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg	<2	<2	<2	<2	<2
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)			Sample ID	1302_QC150_231017	1302_QC151_231017	1302_QC152_231018	1302_QC153_231018	1302_QC154_231018
			Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00	18-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2337477-051	ES2337477-052	ES2337477-053	ES2337477-054	ES2337477-055
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	<2	<2	<2
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg	<5	<5	<5	<5	<5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg	<5	<5	<5	<5	<5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	<2	<2	<2
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	<2	<2	<2
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	<1	<1	<1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	<1	<1	<1
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	<2	<2	<2
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	<2	<2	<2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	<2	<2	<2
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	<2	<2	<2
EP231P: PFAS Sums								
^ **Sum of PFAS**	----	1	µg/kg	**1**	<1	**5**	**5**	**14**
EP231S: PFAS Surrogate								
13C4-PFOS	----	1	%	**89.6**	**90.7**	**95.8**	**107**	**93.8**
13C8-PFOA	----	1	%	**99.0**	**98.6**	**96.6**	**98.4**	**96.4**

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_QC155_231018	----	----	----	----
				Sampling date / time	18-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2337477-056	--------	--------	--------	--------
					Result	----	----	----	----
Biota Sample Pre-Preparation									
ø Sample Description	----	-	--		fillet	----	----	----	----
ø Weight of Sample Prepared	----	0.1	g		43.5	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg		<1	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg		<1	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg		3	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg		<1	----	----	----	----
Perfluorooctane sulfonic acid (PFOS) - Linear	2795-39-3	1	µg/kg		15	----	----	----	----
Perfluorooctane sulfonic acid (PFOS) - Branched	----	1	µg/kg		2	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg		17	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	2	µg/kg		<2	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg		<5	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	2	µg/kg		<2	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg		<1	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg		<1	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg		<1	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg		<1	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg		<1	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg		<1	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	2	µg/kg		<2	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2	µg/kg		<2	----	----	----	----

Analytical Results

Sub-Matrix: BIOTA (Matrix: BIOTA)				Sample ID	1302_QC155_231018	----	----	----	----
				Sampling date / time	18-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2337477-056	--------	--------	--------	--------
					Result	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg		<2	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	5	µg/kg		<5	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	5	µg/kg		<5	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg		<2	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg		<2	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg		<2	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg		<1	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg		<1	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg		<2	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg		<2	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg		<2	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg		<2	----	----	----	----
EP231P: PFAS Sums									
^ **Sum of PFAS**	----	1	µg/kg		**20**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	1	%		**94.3**	----	----	----	----
13C8-PFOA	----	1	%		**101**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC304_231019	1302_QC504_231027	1302_QC505_231019	----	----
				Sampling date / time	19-Oct-2023 00:00	27-Oct-2023 00:00	19-Oct-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2337477-057	ES2337477-058	ES2337477-059	--------	--------
					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	1302_QC304_231019	1302_QC504_231027	1302_QC505_231019	----	----
				Sampling date / time	19-Oct-2023 00:00	27-Oct-2023 00:00	19-Oct-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2337477-057	ES2337477-058	ES2337477-059	--------	--------
					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	%		**93.8**	**92.9**	**94.1**	----	----
13C8-PFOA	----	0.02	%		**99.1**	**99.8**	**97.1**	----	----

Surrogate Control Limits

Sub-Matrix: BIOTA		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	50	130
13C8-PFOA	----	50	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2337477**	Page	: 1 of 16
Client	: [redacted]	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 31-Oct-2023
Order number	: 60612561/3.1	Date Analysis Commenced	: 07-Nov-2023
C-O-C number	: ----	Issue Date	: 01-Dec-2023
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 59		
No. of samples analysed	: 59		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

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: **BIOTA**

				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: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	3	3	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5440084)									
ES2337477-020	1302_BIOAFA334_231018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	3	3	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	17	20	14.8	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
ES2337477-030	1302_BIOAFA344_231018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440084) - continued									
ES2337477-030	1302_BIOAFA344_231018	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	2	2	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	13	12	0.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	1	1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	20	19	6.5	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	58	50	13.0	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
ES2337477-049	1302_QC148_231017	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	2	3	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440070) - continued									
ES2337477-011	1302_BIOAFA325_231017	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5440084)									
ES2337477-020	1302_BIOAFA334_231018	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
ES2337477-030	1302_BIOAFA344_231018	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440090) - continued									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
ES2337477-049	1302_QC148_231017	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1 (2)*	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	<5	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5440084)									

Sub-Matrix: **BIOTA**

				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: 5440084) - continued									
ES2337477-020	1302_BIOAFA334_231018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-030	1302_BIOAFA344_231018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-049	1302_QC148_231017	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1 (5)*	µg/kg	<5	<5	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440090) - continued									
ES2337477-049	1302_QC148_231017	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	<1	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	<2	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5440084)									
ES2337477-020	1302_BIOAFA334_231018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-030	1302_BIOAFA344_231018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit

Sub-Matrix: **BIOTA**

				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: 5440084) - continued									
ES2337477-030	1302_BIOAFA344_231018	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
ES2337477-049	1302_QC148_231017	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	<2	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	<2	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5440070)									
ES2337477-001	1302_BIOAFA315_231017	EP231X: Sum of PFAS	----	1	µg/kg	3	3	0.0	No Limit
ES2337477-011	1302_BIOAFA325_231017	EP231X: Sum of PFAS	----	1	µg/kg	<1	<1	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5440084)									
ES2337477-020	1302_BIOAFA334_231018	EP231X: Sum of PFAS	----	1	µg/kg	20	23	14.0	0% - 20%
ES2337477-030	1302_BIOAFA344_231018	EP231X: Sum of PFAS	----	1	µg/kg	15	14	6.9	0% - 50%
EP231P: PFAS Sums (QC Lot: 5440090)									
ES2337477-039	1302_BIOAFA353_231025	EP231X: Sum of PFAS	----	1	µg/kg	80	70	13.3	0% - 20%
ES2337477-049	1302_QC148_231017	EP231X: Sum of PFAS	----	1	µg/kg	2	3	40.0	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: **BIOTA**

				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: 5440070)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	5 µg/kg	96.0	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	5 µg/kg	101	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	5 µg/kg	92.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	5 µg/kg	79.8	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	5 µg/kg	94.6	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1	µg/kg	<1	5 µg/kg	93.6	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5440084)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	5 µg/kg	76.0	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	5 µg/kg	74.0	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	5 µg/kg	87.7	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	5 µg/kg	97.9	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	5 µg/kg	98.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1	µg/kg	<1	5 µg/kg	105	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5440090)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	1	µg/kg	<1	5 µg/kg	75.4	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	1	µg/kg	<1	5 µg/kg	74.1	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	1	µg/kg	<1	5 µg/kg	86.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	1	µg/kg	<1	5 µg/kg	98.1	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	1	µg/kg	<1	5 µg/kg	84.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	1	µg/kg	<1	5 µg/kg	87.0	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440070)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	25 µg/kg	111	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1	µg/kg	<1	5 µg/kg	98.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	5 µg/kg	112	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	5 µg/kg	80.9	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	5 µg/kg	100	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	5 µg/kg	118	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	5 µg/kg	119	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	5 µg/kg	86.1	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1	µg/kg	<1	5 µg/kg	102	69.0	135

Sub-Matrix: **BIOTA**

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: 5440070) - continued								
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1	µg/kg	<1	5 µg/kg	122	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	12.5 µg/kg	98.5	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440084)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	25 µg/kg	84.5	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1	µg/kg	<1	5 µg/kg	93.5	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	5 µg/kg	87.7	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	5 µg/kg	83.1	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	5 µg/kg	95.2	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	5 µg/kg	93.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	5 µg/kg	95.4	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	5 µg/kg	88.5	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1	µg/kg	<1	5 µg/kg	95.9	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1	µg/kg	<1	5 µg/kg	99.7	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	12.5 µg/kg	95.8	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440090)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	5	µg/kg	<5	25 µg/kg	87.7	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	1	µg/kg	<1	5 µg/kg	84.2	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	1	µg/kg	<1	5 µg/kg	91.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	1	µg/kg	<1	5 µg/kg	84.7	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	1	µg/kg	<1	5 µg/kg	98.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	1	µg/kg	<1	5 µg/kg	81.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	1	µg/kg	<1	5 µg/kg	79.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	1	µg/kg	<1	5 µg/kg	79.6	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	1	µg/kg	<1	5 µg/kg	76.5	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1	µg/kg	<1	5 µg/kg	84.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	2	µg/kg	<2	12.5 µg/kg	89.3	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440070)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1	µg/kg	<1	5 µg/kg	80.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2	µg/kg	<2	12.5 µg/kg	93.6	88.1	105
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	12.5 µg/kg	83.2	81.6	144
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	12.5 µg/kg	108	84.7	135
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	12.5 µg/kg	115	20.5	150

Sub-Matrix: **BIOTA**

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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440070) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	5 µg/kg	88.5	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	5 µg/kg	91.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440084)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1	µg/kg	<1	5 µg/kg	97.3	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2	µg/kg	<2	12.5 µg/kg	95.8	88.1	105
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	12.5 µg/kg	97.4	81.6	144
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	12.5 µg/kg	92.6	84.7	135
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	12.5 µg/kg	91.4	20.5	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	5 µg/kg	98.5	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	5 µg/kg	94.7	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440090)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	1	µg/kg	<1	5 µg/kg	94.9	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	2	µg/kg	<2	12.5 µg/kg	100	88.1	105
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	2	µg/kg	<2	12.5 µg/kg	88.2	81.6	144
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	2	µg/kg	<2	12.5 µg/kg	108	84.7	135
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	2	µg/kg	<2	12.5 µg/kg	84.8	20.5	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	1	µg/kg	<1	5 µg/kg	77.1	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	1	µg/kg	<1	5 µg/kg	75.5	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440070)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	5 µg/kg	84.4	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	5 µg/kg	81.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	5 µg/kg	133	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	5 µg/kg	108	93.4	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440084)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	5 µg/kg	104	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	5 µg/kg	95.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	5 µg/kg	103	65.0	137

Sub-Matrix: **BIOTA**

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: 5440084) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	5 µg/kg	110	93.4	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440090)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	2	µg/kg	<2	5 µg/kg	90.3	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	2	µg/kg	<2	5 µg/kg	82.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	2	µg/kg	<2	5 µg/kg	91.4	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	2	µg/kg	<2	5 µg/kg	111	93.4	130
EP231P: PFAS Sums (QCLot: 5440070)								
EP231X: Sum of PFAS	----	1	µg/kg	<1	----	----	----	----
EP231P: PFAS Sums (QCLot: 5440084)								
EP231X: Sum of PFAS	----	1	µg/kg	<1	----	----	----	----
EP231P: PFAS Sums (QCLot: 5440090)								
EP231X: Sum of PFAS	----	1	µg/kg	<1	----	----	----	----

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
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5455386)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	83.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	83.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	92.4	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	89.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	80.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5455386)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	81.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.3	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	97.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	88.5	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	92.7	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.1	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	87.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.3	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	90.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	83.9	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	97.5	71.0	132

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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5455386)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.1	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.9	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	91.3	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.2	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	88.7	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	90.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5455386)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	86.0	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	86.6	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	90.4	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	103	71.4	144

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: **BIOTA**

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: 5440070)							
ES2337477-002	1302_BIOAFA316_231017	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	5 µg/kg	114	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	5 µg/kg	87.0	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	5 µg/kg	97.0	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	5 µg/kg	93.8	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	5 µg/kg	113	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	5 µg/kg	78.5	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5440084)							
ES2337477-021	1302_BIOAFA335_231018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	5 µg/kg	81.5	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	5 µg/kg	84.2	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	5 µg/kg	88.1	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	5 µg/kg	100	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	5 µg/kg	# Not Determined	68.0	136

Sub-Matrix: **BIOTA**

				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: 5440084) - continued							
ES2337477-021	1302_BIOAFA335_231018	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	5 µg/kg	89.0	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5440090)							
ES2337477-040	1302_BIOAFA354_231025	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	5 µg/kg	82.0	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	5 µg/kg	73.3	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	5 µg/kg	106	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	5 µg/kg	107	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	5 µg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	5 µg/kg	102	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440070)							
ES2337477-002	1302_BIOAFA316_231017	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	25 µg/kg	108	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	5 µg/kg	88.6	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	5 µg/kg	105	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	5 µg/kg	80.3	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	5 µg/kg	99.6	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	5 µg/kg	110	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	5 µg/kg	117	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	5 µg/kg	82.0	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	5 µg/kg	101	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	5 µg/kg	114	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	12.5 µg/kg	98.6	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440084)							
ES2337477-021	1302_BIOAFA335_231018	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	25 µg/kg	85.6	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	5 µg/kg	102	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	5 µg/kg	94.0	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	5 µg/kg	85.8	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	5 µg/kg	102	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	5 µg/kg	102	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	5 µg/kg	96.2	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	5 µg/kg	101	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	5 µg/kg	102	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	5 µg/kg	102	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	12.5 µg/kg	99.6	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5440090)							
ES2337477-040	1302_BIOAFA354_231025	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	25 µg/kg	80.9	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	5 µg/kg	81.6	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	5 µg/kg	91.0	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	5 µg/kg	85.6	71.0	131

Sub-Matrix: **BIOTA**

				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: 5440090) - continued							
ES2337477-040	1302_BIOAFA354_231025	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	5 µg/kg	93.8	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	5 µg/kg	78.4	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	5 µg/kg	85.9	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	5 µg/kg	83.5	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	5 µg/kg	90.3	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	5 µg/kg	78.8	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	12.5 µg/kg	94.3	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440070)							
ES2337477-002	1302_BIOAFA316_231017	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	5 µg/kg	86.2	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	12.5 µg/kg	100	88.1	105
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	12.5 µg/kg	# 75.6	81.6	144
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	12.5 µg/kg	97.8	84.7	135
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	12.5 µg/kg	107	20.5	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	5 µg/kg	114	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	5 µg/kg	86.3	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440084)							
ES2337477-021	1302_BIOAFA335_231018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	5 µg/kg	93.2	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	12.5 µg/kg	104	88.1	105
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	12.5 µg/kg	91.6	81.6	144
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	12.5 µg/kg	107	84.7	135
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	12.5 µg/kg	102	20.5	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	5 µg/kg	102	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	5 µg/kg	99.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5440090)							
ES2337477-040	1302_BIOAFA354_231025	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	5 µg/kg	92.2	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	12.5 µg/kg	90.4	88.1	105
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	12.5 µg/kg	89.4	81.6	144

Sub-Matrix: **BIOTA**

				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: 5440090) - continued							
ES2337477-040	1302_BIOAFA354_231025	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	12.5 µg/kg	90.9	84.7	135
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	12.5 µg/kg	83.0	20.5	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	5 µg/kg	83.5	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	5 µg/kg	80.6	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440070)							
ES2337477-002	1302_BIOAFA316_231017	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	5 µg/kg	76.1	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	5 µg/kg	88.7	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	5 µg/kg	95.1	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	5 µg/kg	116	93.4	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440084)							
ES2337477-021	1302_BIOAFA335_231018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	5 µg/kg	105	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	5 µg/kg	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	5 µg/kg	114	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	5 µg/kg	97.2	93.4	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5440090)							
ES2337477-040	1302_BIOAFA354_231025	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	5 µg/kg	88.4	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	5 µg/kg	91.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	5 µg/kg	91.1	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	5 µg/kg	122	93.4	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2337477**	Page	: 1 of 12
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 31-Oct-2023
Site	: ----	Issue Date	: 01-Dec-2023
Sampler	: [redacted]	No. of samples received	: 59
Order number	: 60612561/3.1	No. of samples analysed	: 59

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: **BIOTA**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	ES2337477--021	1302_BIOAFA335_231018	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ES2337477--040	1302_BIOAFA354_231025	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231C: Perfluoroalkyl Sulfonamides	ES2337477--002	1302_BIOAFA316_231017	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	4151-50-2	75.6 %	81.6-144%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	8	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: **BIOTA**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method	***Sample Date***	*Extraction / Preparation*			*Analysis*		
Container / *Client Sample ID(s)*		***Date extracted***	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*

Matrix: **BIOTA**

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
Biota Sample Pre-Preparation							
Snap Lock Bag (Biota-PP)							
1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017, 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017, 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	17-Oct-2023	14-Nov-2023	----	----	----	----	----
Snap Lock Bag (Biota-PP)							
1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018, 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018, 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	18-Oct-2023	14-Nov-2023	----	----	----	----	----
Snap Lock Bag (Biota-PP)							
1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	25-Oct-2023	14-Nov-2023	----	----	----	----	----

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**28-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**28-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017, 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**28-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X)							

Matrix: **BIOTA**

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							
1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**28-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018, 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231-PFOS-SP) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

Matrix: **BIOTA**

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							
Snap Lock Bag (EP231X) 1302_BIOAFA348_231017, 1302_BIOAFA349_231017, 1302_BIOAFA350_231017, 1302_BIOAFA351_231017, 1302_BIOAFA352_231017	**17-Oct-2023**	**27-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA315_231017, 1302_BIOAFA316_231017, 1302_BIOAFA317_231017, 1302_BIOAFA318_231017, 1302_BIOAFA319_231017, 1302_BIOAFA320_231017, 1302_BIOAFA321_231017, 1302_BIOAFA322_231017, 1302_BIOAFA323_231017, 1302_BIOAFA324_231017, 1302_BIOAFA325_231017, 1302_BIOAFA326_231017, 1302_BIOAFA327_231017, 1302_BIOAFA328_231017, 1302_BIOAFA329_231017, 1302_BIOAFA330_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC148_231017, 1302_QC149_231017, 1302_QC150_231017, 1302_QC151_231017	**17-Oct-2023**	**28-Nov-2023**	14-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA334_231018, 1302_BIOAFA335_231018, 1302_BIOAFA336_231018, 1302_BIOAFA337_231018, 1302_BIOAFA338_231018, 1302_BIOAFA339_231018, 1302_BIOAFA340_231018, 1302_BIOAFA341_231018, 1302_BIOAFA342_231018, 1302_BIOAFA343_231018, 1302_BIOAFA344_231018, 1302_BIOAFA345_231018, 1302_BIOAFA346_231018, 1302_BIOAFA347_231018	**18-Oct-2023**	**27-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	06-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA331_231018, 1302_BIOAFA332_231018, 1302_BIOAFA333_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**29-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_QC152_231018, 1302_QC153_231018, 1302_QC154_231018, 1302_QC155_231018	**18-Oct-2023**	**28-Nov-2023**	15-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓
Snap Lock Bag (EP231X) 1302_BIOAFA353_231025, 1302_BIOAFA354_231025, 1302_BIOAFA355_231025, 1302_BIOAFA356_231025, 1302_BIOAFA357_231025, 1302_BIOAFA358_231025, 1302_BIOAFA359_231025, 1302_BIOAFA360_231025, 1302_BIOAFA361_231025, 1302_BIOAFA362_231025	**25-Oct-2023**	**28-Nov-2023**	22-Apr-2024	✓	**30-Nov-2023**	07-Jan-2024	✓

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

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) 1302_QC304_231019, 1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027	**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 1302_QC304_231019, 1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027	**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 1302_QC304_231019, 1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027	**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 1302_QC304_231019, 1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027	**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 1302_QC304_231019, 1302_QC505_231019	**19-Oct-2023**	**29-Nov-2023**	16-Apr-2024	✓	**30-Nov-2023**	16-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_QC504_231027	**27-Oct-2023**	**29-Nov-2023**	24-Apr-2024	✓	**30-Nov-2023**	24-Apr-2024	✓

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: **BIOTA**

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	6	56	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	5.36	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	5.36	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	5.36	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	8	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	8	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
PFOS - Linear/Branched Speciation	EP231-PFOS-SP	BIOTA	In-house: Linear PFOS is determined by quantiation of the separate linear peak using linear PFOS. Branched PFOS is determined as the difference between total PFOS (determined using a mixed linear/branched standard) and linear PFOS.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	BIOTA	In-house: A sample extract is analysed 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 biota which is then solvent extracted. 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
Prep-Preparation for Biota Analysis	* Biota-PP	BIOTA	A sample is prepared from whole or particular tissues/organs, identified, homogenised and the total weight of prepared sample recorded.
Sample Preparation for PFAS in Biota	EP231-PR	BIOTA	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of homogenised biota 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 conform to US DoD QSM 5.3, table B-15 requirements.
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	: **ES2342430**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_23	Page	: 1 of 3
Order number	: 60612561	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 61176	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NT_1302_PFASOMP_23		
Sampler	: [redacted]		

Dates

Date Samples Received	: 08-Dec-2023 08:30	Issue Date	: 08-Dec-2023
Client Requested Due Date	: 14-Dec-2023	Scheduled Reporting Date	: **14-Dec-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 20.2'C DRW 10.6'C 10.6'C 11.4'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 16 / 16

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
- **Sample 1302_SW108_231206 not received.**
- **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.**
- **QC Forward analysis will be conducted by NMI.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2342430-001	06-Dec-2023 11:49	1302_SW106_231206	✓
ES2342430-003	06-Dec-2023 11:56	1302_SW112_231206	✓
ES2342430-004	06-Dec-2023 09:49	1302_SW113_231206	✓
ES2342430-005	06-Dec-2023 11:08	1302_SW115_231206	✓
ES2342430-006	06-Dec-2023 12:07	1302_SW168_231206	✓
ES2342430-007	06-Dec-2023 09:12	1302_SW120_231206	✓
ES2342430-008	06-Dec-2023 08:55	1302_SW124_231206	✓
ES2342430-009	06-Dec-2023 09:34	1302_SW125_231206	✓
ES2342430-010	06-Dec-2023 07:44	1302_SW132_231206	✓
ES2342430-011	06-Dec-2023 07:56	1302_SW133_231206	✓
ES2342430-012	06-Dec-2023 08:29	1302_SW143_231206	✓
ES2342430-013	06-Dec-2023 12:23	1302_SW109_231206	✓
ES2342430-014	06-Dec-2023 08:19	1302_QC100_231206	✓
ES2342430-016	06-Dec-2023 12:54	1302_QC300_231206	✓
ES2342430-017	06-Dec-2023 12:56	1302_QC400_231206	✓
ES2342430-018	06-Dec-2023 12:58	1302_QC500_231206	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2342430**	Page	: 1 of 11
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: + [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 08-Dec-2023 08:30
Order number	: 60612561	Date Analysis Commenced	: 11-Dec-2023
C-O-C number	: 61176	Issue Date	: 13-Dec-2023 16:00
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_23		
Quote number	: SY/139/19 V3		
No. of samples received	: 16		
No. of samples analysed	: 16		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: Positive results for samples #5 and #10 confirmed by re-analysis.
- 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	1302_SW106_231206	1302_SW112_231206	1302_SW113_231206	1302_SW115_231206	1302_SW168_231206
				Sampling date / time	06-Dec-2023 11:49	06-Dec-2023 11:56	06-Dec-2023 09:49	06-Dec-2023 11:08	06-Dec-2023 12:07
Compound	CAS Number	LOR	Unit		ES2342430-001	ES2342430-003	ES2342430-004	ES2342430-005	ES2342430-006
					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	**0.06**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.08**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	**0.14**	**0.02**	<0.01	**0.66**
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		**0.04**	**0.19**	**0.04**	<0.01	**1.06**
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		<0.02	<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	**0.13**
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**	**0.05**
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW106_231206	1302_SW112_231206	1302_SW113_231206	1302_SW115_231206	1302_SW168_231206
				Sampling date / time	06-Dec-2023 11:49	06-Dec-2023 11:56	06-Dec-2023 09:49	06-Dec-2023 11:08	06-Dec-2023 12:07
Compound	CAS Number	LOR	Unit		ES2342430-001	ES2342430-003	ES2342430-004	ES2342430-005	ES2342430-006
					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		**0.06**	**0.37**	**0.06**	**0.01**	**2.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.06**	**0.33**	**0.06**	<0.01	**1.72**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	**0.37**	**0.06**	**0.01**	**2.00**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**99.6**	**110**	**105**	**102**
13C8-PFOA	----	0.02	%		**101**	**100**	**103**	**98.9**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW120_231206	1302_SW124_231206	1302_SW125_231206	1302_SW132_231206	1302_SW133_231206
				Sampling date / time	06-Dec-2023 09:12	06-Dec-2023 08:55	06-Dec-2023 09:34	06-Dec-2023 07:44	06-Dec-2023 07:56
Compound	CAS Number	LOR	Unit		ES2342430-007	ES2342430-008	ES2342430-009	ES2342430-010	ES2342430-011
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.05**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.02**	<0.02	**0.07**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.19**	<0.01	**0.53**	<0.01	**0.02**
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	**0.71**	**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		**0.05**	<0.02	**0.08**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.07**	<0.02	**0.15**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.04**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.01**	<0.01	**0.03**	<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: WATER (Matrix: WATER)				Sample ID	1302_SW120_231206	1302_SW124_231206	1302_SW125_231206	1302_SW132_231206	1302_SW133_231206
				Sampling date / time	06-Dec-2023 09:12	06-Dec-2023 08:55	06-Dec-2023 09:34	06-Dec-2023 07:44	06-Dec-2023 07:56
Compound	CAS Number	LOR	Unit		ES2342430-007	ES2342430-008	ES2342430-009	ES2342430-010	ES2342430-011
					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	<0.05	<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	**0.19**	<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		**0.63**	<0.01	**1.87**	**0.01**	**0.04**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.48**	<0.01	**1.24**	**0.01**	**0.04**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.61**	<0.01	**1.78**	**0.01**	**0.04**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**107**	**109**	**110**	**99.0**	**102**
13C8-PFOA	----	0.02	%		**96.8**	**102**	**101**	**97.6**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW143_231206	1302_SW109_231206	1302_QC100_231206	1302_QC300_231206	1302_QC400_231206
				Sampling date / time	06-Dec-2023 08:29	06-Dec-2023 12:23	06-Dec-2023 08:19	06-Dec-2023 12:54	06-Dec-2023 12:56
Compound	CAS Number	LOR	Unit		ES2342430-012	ES2342430-013	ES2342430-014	ES2342430-016	ES2342430-017
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.06**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	**0.60**	**0.02**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.03**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	**0.82**	**0.02**	<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		**0.03**	**0.03**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.03**	**0.12**	<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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW143_231206	1302_SW109_231206	1302_QC100_231206	1302_QC300_231206	1302_QC400_231206
				Sampling date / time	06-Dec-2023 08:29	06-Dec-2023 12:23	06-Dec-2023 08:19	06-Dec-2023 12:54	06-Dec-2023 12:56
Compound	CAS Number	LOR	Unit		ES2342430-012	ES2342430-013	ES2342430-014	ES2342430-016	ES2342430-017
					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		**0.15**	**1.77**	**0.04**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.09**	**1.42**	**0.04**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.15**	**1.66**	**0.04**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**103**	**106**	**108**	**105**
13C8-PFOA	----	0.02	%		**100**	**93.5**	**98.5**	**102**	**105**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC500_231206	----	----	----	----
				Sampling date / time	06-Dec-2023 12:58	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2342430-018	--------	--------	--------	--------
					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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC500_231206	----	----	----	----
				Sampling date / time	06-Dec-2023 12:58	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2342430-018	--------	--------	--------	--------
					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		<0.05	----	----	----	----
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	%		**108**	----	----	----	----
13C8-PFOA	----	0.02	%		**108**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2342430**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: ----	Telephone	: +[redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 08-Dec-2023
Order number	: 60612561	Date Analysis Commenced	: 11-Dec-2023
C-O-C number	: 61176	Issue Date	: 13-Dec-2023
Sampler	[redacted]		
Site	: NT_1302_PFASOMP_23		
Quote number	: SY/139/19 V3		
No. of samples received	: 16		
No. of samples analysed	: 16		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5480367)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	85.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	96.5	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	81.5	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	90.2	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	88.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5480367)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	78.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	93.1	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	93.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	96.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	100.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	82.5	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	83.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	76.9	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	77.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	87.9	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	89.1	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5480367)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	93.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	98.5	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	84.8	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	96.8	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	93.0	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	85.3	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	91.7	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5480367)								

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: 5480367) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	79.1	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	107	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	103	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	80.5	71.4	144

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	: **ES2342430**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 08-Dec-2023
Site	: NT_1302_PFASOMP_23	Issue Date	: 13-Dec-2023
Sampler	: [redacted]	No. of samples received	: 16
Order number	: 60612561	No. of samples analysed	: 16

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		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	17	0.00	10.00	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

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)								
1302_SW106_231206,	1302_SW112_231206,	**06-Dec-2023**	**12-Dec-2023**	03-Jun-2024	✓	**13-Dec-2023**	03-Jun-2024	✓
1302_SW113_231206,	1302_SW115_231206,							
1302_SW168_231206,	1302_SW120_231206,							
1302_SW124_231206,	1302_SW125_231206,							
1302_SW132_231206,	1302_SW133_231206,							
1302_SW143_231206,	1302_SW109_231206,							
1302_QC100_231206,	1302_QC300_231206,							
1302_QC400_231206,	1302_QC500_231206							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
1302_SW106_231206,	1302_SW112_231206,	**06-Dec-2023**	**12-Dec-2023**	03-Jun-2024	✓	**13-Dec-2023**	03-Jun-2024	✓
1302_SW113_231206,	1302_SW115_231206,							
1302_SW168_231206,	1302_SW120_231206,							
1302_SW124_231206,	1302_SW125_231206,							
1302_SW132_231206,	1302_SW133_231206,							
1302_SW143_231206,	1302_SW109_231206,							
1302_QC100_231206,	1302_QC300_231206,							
1302_QC400_231206,	1302_QC500_231206							

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)							
1302_SW106_231206, 1302_SW112_231206, 1302_SW113_231206, 1302_SW115_231206, 1302_SW168_231206, 1302_SW120_231206, 1302_SW124_231206, 1302_SW125_231206, 1302_SW132_231206, 1302_SW133_231206, 1302_SW143_231206, 1302_SW109_231206, 1302_QC100_231206, 1302_QC300_231206, 1302_QC400_231206, 1302_QC500_231206	**06-Dec-2023**	**12-Dec-2023**	03-Jun-2024	✓	**13-Dec-2023**	03-Jun-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
1302_SW106_231206, 1302_SW112_231206, 1302_SW113_231206, 1302_SW115_231206, 1302_SW168_231206, 1302_SW120_231206, 1302_SW124_231206, 1302_SW125_231206, 1302_SW132_231206, 1302_SW133_231206, 1302_SW143_231206, 1302_SW109_231206, 1302_QC100_231206, 1302_QC300_231206, 1302_QC400_231206, 1302_QC500_231206	**06-Dec-2023**	**12-Dec-2023**	03-Jun-2024	✓	**13-Dec-2023**	03-Jun-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
1302_SW106_231206, 1302_SW112_231206, 1302_SW113_231206, 1302_SW115_231206, 1302_SW168_231206, 1302_SW120_231206, 1302_SW124_231206, 1302_SW125_231206, 1302_SW132_231206, 1302_SW133_231206, 1302_SW143_231206, 1302_SW109_231206, 1302_QC100_231206, 1302_QC300_231206, 1302_QC400_231206, 1302_QC500_231206	**06-Dec-2023**	**12-Dec-2023**	03-Jun-2024	✓	**13-Dec-2023**	03-Jun-2024	✓

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	17	**0.00**	**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.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES2343471**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_23	Page	: 1 of 3
Order number	: 60612561/4.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 18-Dec-2023 10:30	Issue Date	: 18-Dec-2023
Client Requested Due Date	: 27-Dec-2023	Scheduled Reporting Date	: **27-Dec-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 8.8'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 18 / 18

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
- **Sample 1302_QC200_231213 was forwarded to ALS Brisbane**
- **Sample ID 1302_QC201_231214 will be forwarded to NMI as per Client.**
- **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 direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2343471-001	13-Dec-2023 00:00	1302_SW285_231213	✓
ES2343471-002	13-Dec-2023 00:00	1302_QC100_231213	✓
ES2343471-003	13-Dec-2023 00:00	1302_SW114_231213	✓
ES2343471-004	13-Dec-2023 00:00	1302_SW104_231213	✓
ES2343471-005	13-Dec-2023 00:00	1302_SW300_231213	✓
ES2343471-006	13-Dec-2023 00:00	1302_SW170_231213	✓
ES2343471-007	13-Dec-2023 00:00	1302_SW312_231213	✓
ES2343471-008	13-Dec-2023 00:00	1302_SW178_231213	✓
ES2343471-009	13-Dec-2023 00:00	1302_SW181_231213	✓
ES2343471-010	13-Dec-2023 00:00	1302_SW162_231213	✓
ES2343471-011	14-Dec-2023 00:00	1302_SW152_231214	✓
ES2343471-012	14-Dec-2023 00:00	1302_QC101_231214	✓
ES2343471-014	14-Dec-2023 00:00	1302_SW160_231214	✓
ES2343471-015	14-Dec-2023 00:00	1302_SW156_231214	✓
ES2343471-016	14-Dec-2023 00:00	1302_SW108_231214	✓
ES2343471-017	14-Dec-2023 00:00	1302_QC300_231214	✓
ES2343471-018	14-Dec-2023 00:00	1302_QC400_231214	✓
ES2343471-019	14-Dec-2023 00:00	1302_QC500_231214	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2343471**	Page	: 1 of 11
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 18-Dec-2023 10:30
Order number	: 60612561/4.1	Date Analysis Commenced	: 19-Dec-2023
C-O-C number	: ----	Issue Date	: 27-Dec-2023 10:10
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 18		
No. of samples analysed	: 18		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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	1302_SW285_231213	1302_QC100_231213	1302_SW114_231213	1302_SW104_231213	1302_SW300_231213
				Sampling date / time	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00
Compound	CAS Number	LOR	Unit		ES2343471-001	ES2343471-002	ES2343471-003	ES2343471-004	ES2343471-005
					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	**0.05**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.03**	**0.03**	<0.01	**0.22**	**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		**0.04**	**0.04**	<0.01	**0.22**	**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	**0.04**	<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: WATER (Matrix: WATER)				Sample ID	1302_SW285_231213	1302_QC100_231213	1302_SW114_231213	1302_SW104_231213	1302_SW300_231213
				Sampling date / time	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00
Compound	CAS Number	LOR	Unit		ES2343471-001	ES2343471-002	ES2343471-003	ES2343471-004	ES2343471-005
					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		**0.07**	**0.07**	<0.01	**0.56**	**0.05**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	**0.07**	<0.01	**0.44**	**0.05**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.07**	**0.07**	<0.01	**0.53**	**0.05**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.9**	**102**	**101**	**100**	**98.8**
13C8-PFOA	----	0.02	%		**96.9**	**100**	**99.0**	**97.5**	**92.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW170_231213	1302_SW312_231213	1302_SW178_231213	1302_SW181_231213	1302_SW162_231213
				Sampling date / time	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00
Compound	CAS Number	LOR	Unit		ES2343471-006	ES2343471-007	ES2343471-008	ES2343471-009	ES2343471-010
					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		**0.07**	**0.10**	<0.01	**0.12**	**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: WATER (Matrix: WATER)				Sample ID	1302_SW170_231213	1302_SW312_231213	1302_SW178_231213	1302_SW181_231213	1302_SW162_231213
				Sampling date / time	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00	13-Dec-2023 00:00
Compound	CAS Number	LOR	Unit		ES2343471-006	ES2343471-007	ES2343471-008	ES2343471-009	ES2343471-010
					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	<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**	**0.10**	<0.01	**0.12**	**0.01**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	**0.10**	<0.01	**0.12**	**0.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.07**	**0.10**	<0.01	**0.12**	**0.01**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**104**	**96.7**	**97.1**	**97.2**	**99.8**
13C8-PFOA	----	0.02	%		**97.1**	**101**	**96.5**	**96.4**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW152_231214	1302_QC101_231214	1302_SW160_231214	1302_SW156_231214	1302_SW108_231214
				Sampling date / time	14-Dec-2023 00:00	14-Dec-2023 00:00	14-Dec-2023 00:00	14-Dec-2023 00:00	14-Dec-2023 00:00
Compound	CAS Number	LOR	Unit		ES2343471-011	ES2343471-012	ES2343471-014	ES2343471-015	ES2343471-016
					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**	**0.06**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.05**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.02**	**0.07**	**0.45**
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		**0.12**	**0.12**	**0.06**	**0.51**	**0.55**
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	**0.04**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.05**	**0.08**
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**	**0.02**
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	**0.03**	<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	1302_SW152_231214	1302_QC101_231214	1302_SW160_231214	1302_SW156_231214	1302_SW108_231214
				Sampling date / time	14-Dec-2023 00:00	14-Dec-2023 00:00	14-Dec-2023 00:00	14-Dec-2023 00:00	14-Dec-2023 00:00
Compound	CAS Number	LOR	Unit		ES2343471-011	ES2343471-012	ES2343471-014	ES2343471-015	ES2343471-016
					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	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	**0.09**	<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**	**0.12**	**0.08**	**0.86**	**1.23**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.12**	**0.12**	**0.08**	**0.58**	**1.00**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.12**	**0.12**	**0.08**	**0.81**	**1.16**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**91.8**	**93.8**	**102**	**98.1**	**94.7**
13C8-PFOA	----	0.02	%		**96.9**	**102**	**102**	**98.5**	**97.9**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC300_231214	1302_QC400_231214	1302_QC500_231214	----	----
				Sampling date / time	14-Dec-2023 00:00	14-Dec-2023 00:00	14-Dec-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2343471-017	ES2343471-018	ES2343471-019	--------	--------
					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	1302_QC300_231214	1302_QC400_231214	1302_QC500_231214	----	----
				Sampling date / time	14-Dec-2023 00:00	14-Dec-2023 00:00	14-Dec-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2343471-017	ES2343471-018	ES2343471-019	--------	--------
					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	%		**95.8**	**97.2**	**98.9**	----	----
13C8-PFOA	----	0.02	%		**100**	**99.5**	**96.4**	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2343471**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	[redacted]
Address	[redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 18-Dec-2023
Order number	: 60612561/4.1	Date Analysis Commenced	: 19-Dec-2023
C-O-C number	: ----	Issue Date	: 27-Dec-2023
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 18		
No. of samples analysed	: 18		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5503101)									
ES2343471-001	1302_SW285_231213	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.04	0.03	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: 5503101)									
ES2343471-001	1302_SW285_231213	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: 5503101)									
ES2343471-001	1302_SW285_231213	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

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: 5503101) - continued									
ES2343471-001	1302_SW285_231213	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: 5503101)									
ES2343471-001	1302_SW285_231213	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: 5503101)									
ES2343471-001	1302_SW285_231213	EP231X: Sum of PFAS	----	0.01	µg/L	0.07	0.06	15.4	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: 5503101)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	94.1	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	95.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	98.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	105	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	97.0	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	84.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5503101)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	100.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	112	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	112	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	105	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	106	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	105	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	101	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5503101)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	103	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	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	102	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	102	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	98.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5503101)								

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: 5503101) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	95.5	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	96.3	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	124	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	115	71.4	144

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: 5503101)							
ES2343471-001	1302_SW285_231213	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	95.4	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	100	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	101	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	115	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	104	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	99.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5503101)							
ES2343471-001	1302_SW285_231213	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	102	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	106	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	113	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	108	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	118	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	109	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	115	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	108	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	114	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	111	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	105	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5503101)							
ES2343471-001	1302_SW285_231213	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	104	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	114	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	98.7	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	106	66.0	145

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: 5503101) - continued							
ES2343471-001	1302_SW285_231213	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	103	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	114	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	112	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5503101)							
ES2343471-001	1302_SW285_231213	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	90.7	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	109	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	103	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	87.8	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2343471**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 18-Dec-2023
Site	: ----	Issue Date	: 27-Dec-2023
Sampler	: [redacted]	No. of samples received	: 18
Order number	: 60612561/4.1	No. of samples analysed	: 18

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		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	5.56	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)								
1302_SW285_231213,	1302_QC100_231213,	**13-Dec-2023**	**19-Dec-2023**	10-Jun-2024	✓	**21-Dec-2023**	10-Jun-2024	✓
1302_SW114_231213,	1302_SW104_231213,							
1302_SW300_231213,	1302_SW170_231213,							
1302_SW312_231213,	1302_SW178_231213,							
1302_SW181_231213,	1302_SW162_231213							
HDPE (no PTFE) (EP231X)								
1302_SW152_231214,	1302_QC101_231214,	**14-Dec-2023**	**19-Dec-2023**	11-Jun-2024	✓	**21-Dec-2023**	11-Jun-2024	✓
1302_SW160_231214,	1302_SW156_231214,							
1302_SW108_231214,	1302_QC300_231214,							
1302_QC400_231214,	1302_QC500_231214							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
1302_SW285_231213,	1302_QC100_231213,	**13-Dec-2023**	**19-Dec-2023**	10-Jun-2024	✓	**21-Dec-2023**	10-Jun-2024	✓
1302_SW114_231213,	1302_SW104_231213,							
1302_SW300_231213,	1302_SW170_231213,							
1302_SW312_231213,	1302_SW178_231213,							
1302_SW181_231213,	1302_SW162_231213							
HDPE (no PTFE) (EP231X)								
1302_SW152_231214,	1302_QC101_231214,	**14-Dec-2023**	**19-Dec-2023**	11-Jun-2024	✓	**21-Dec-2023**	11-Jun-2024	✓
1302_SW160_231214,	1302_SW156_231214,							
1302_SW108_231214,	1302_QC300_231214,							
1302_QC400_231214,	1302_QC500_231214							

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)								
1302_SW285_231213,	1302_QC100_231213,	**13-Dec-2023**	**19-Dec-2023**	10-Jun-2024	✓	**21-Dec-2023**	10-Jun-2024	✓
1302_SW114_231213,	1302_SW104_231213,							
1302_SW300_231213,	1302_SW170_231213,							
1302_SW312_231213,	1302_SW178_231213,							
1302_SW181_231213,	1302_SW162_231213							
HDPE (no PTFE) (EP231X)								
1302_SW152_231214,	1302_QC101_231214,	**14-Dec-2023**	**19-Dec-2023**	11-Jun-2024	✓	**21-Dec-2023**	11-Jun-2024	✓
1302_SW160_231214,	1302_SW156_231214,							
1302_SW108_231214,	1302_QC300_231214,							
1302_QC400_231214,	1302_QC500_231214							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
1302_SW285_231213,	1302_QC100_231213,	**13-Dec-2023**	**19-Dec-2023**	10-Jun-2024	✓	**21-Dec-2023**	10-Jun-2024	✓
1302_SW114_231213,	1302_SW104_231213,							
1302_SW300_231213,	1302_SW170_231213,							
1302_SW312_231213,	1302_SW178_231213,							
1302_SW181_231213,	1302_SW162_231213							
HDPE (no PTFE) (EP231X)								
1302_SW152_231214,	1302_QC101_231214,	**14-Dec-2023**	**19-Dec-2023**	11-Jun-2024	✓	**21-Dec-2023**	11-Jun-2024	✓
1302_SW160_231214,	1302_SW156_231214,							
1302_SW108_231214,	1302_QC300_231214,							
1302_QC400_231214,	1302_QC500_231214							
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
1302_SW285_231213,	1302_QC100_231213,	**13-Dec-2023**	**19-Dec-2023**	10-Jun-2024	✓	**21-Dec-2023**	10-Jun-2024	✓
1302_SW114_231213,	1302_SW104_231213,							
1302_SW300_231213,	1302_SW170_231213,							
1302_SW312_231213,	1302_SW178_231213,							
1302_SW181_231213,	1302_SW162_231213							
HDPE (no PTFE) (EP231X)								
1302_SW152_231214,	1302_QC101_231214,	**14-Dec-2023**	**19-Dec-2023**	11-Jun-2024	✓	**21-Dec-2023**	11-Jun-2024	✓
1302_SW160_231214,	1302_SW156_231214,							
1302_SW108_231214,	1302_QC300_231214,							
1302_QC400_231214,	1302_QC500_231214							

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	18	**5.56**	**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.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2402439**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_24	Page	: 1 of 3
Order number	: 60612561/4.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 62846	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NT_1302_PFASOMP_24		
Sampler	: [redacted]		

Dates

Date Samples Received	: 25-Jan-2024 14:30	Issue Date	: 25-Jan-2024
Client Requested Due Date	: 01-Feb-2024	Scheduled Reporting Date	: **01-Feb-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 8.7'C - Ice present
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 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.**
- **QC Forward analysis will be conducted by NMI.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2402439-001	24-Jan-2024 11:28	1302_SW109_240124	✓
ES2402439-002	24-Jan-2024 10:52	1302_SW300_240124	✓
ES2402439-003	24-Jan-2024 12:17	1302_SW170_240124	✓
ES2402439-004	24-Jan-2024 11:56	1302_SW312_240124	✓
ES2402439-005	23-Jan-2024 07:41	1302_QC100_240124	✓
ES2402439-007	23-Jan-2024 07:42	1302_QC300_240124	✓
ES2402439-008	23-Jan-2024 07:42	1302_QC400_240124	✓
ES2402439-009	23-Jan-2024 07:43	1302_QC500_240124	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2402439**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 25-Jan-2024 14:30
Order number	: 60612561/4.1	Date Analysis Commenced	: 29-Jan-2024
C-O-C number	: 62846	Issue Date	: 01-Feb-2024 12:03
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 8		
No. of samples analysed	: 8		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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	1302_SW109_240124	1302_SW300_240124	1302_SW170_240124	1302_SW312_240124	1302_QC100_240124
				Sampling date / time	24-Jan-2024 11:28	24-Jan-2024 10:52	24-Jan-2024 12:17	24-Jan-2024 11:56	23-Jan-2024 07:41
Compound	CAS Number	LOR	Unit		ES2402439-001	ES2402439-002	ES2402439-003	ES2402439-004	ES2402439-005
					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	<0.02
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		**0.21**	<0.01	**0.05**	**0.04**	**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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW109_240124	1302_SW300_240124	1302_SW170_240124	1302_SW312_240124	1302_QC100_240124
				Sampling date / time	24-Jan-2024 11:28	24-Jan-2024 10:52	24-Jan-2024 12:17	24-Jan-2024 11:56	23-Jan-2024 07:41
Compound	CAS Number	LOR	Unit		ES2402439-001	ES2402439-002	ES2402439-003	ES2402439-004	ES2402439-005
					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		**0.32**	<0.01	**0.05**	**0.04**	**0.04**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.32**	<0.01	**0.05**	**0.04**	**0.04**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.32**	<0.01	**0.05**	**0.04**	**0.04**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**91.0**	**91.2**	**90.5**	**85.7**	**91.5**
13C8-PFOA	----	0.02	%		**95.3**	**95.4**	**98.2**	**98.3**	**93.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC300_240124	1302_QC400_240124	1302_QC500_240124	----	----
				Sampling date / time	23-Jan-2024 07:42	23-Jan-2024 07:42	23-Jan-2024 07:43	----	----
Compound	CAS Number	LOR	Unit		ES2402439-007	ES2402439-008	ES2402439-009	--------	--------
					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	1302_QC300_240124	1302_QC400_240124	1302_QC500_240124	----	----
				Sampling date / time	23-Jan-2024 07:42	23-Jan-2024 07:42	23-Jan-2024 07:43	----	----
Compound	CAS Number	LOR	Unit		ES2402439-007	ES2402439-008	ES2402439-009	--------	--------
					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	%		**89.7**	**91.9**	**90.2**	----	----
13C8-PFOA	----	0.02	%		**92.9**	**93.4**	**92.7**	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2402439**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 25-Jan-2024
Order number	: 60612561/4.1	Date Analysis Commenced	: 29-Jan-2024
C-O-C number	: 62846	Issue Date	: 01-Feb-2024
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 8		
No. of samples analysed	: 8		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5569373)									
ES2402504-001	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	0.03	0.03	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
ES2402506-001	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	0.08	0.08	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: 5569373)									
ES2402504-001	Anonymous	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	<0.02	<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

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: 5569373) - continued									
ES2402504-001	Anonymous	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
ES2402506-001	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: 5569373)									
ES2402504-001	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
		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
ES2402506-001	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
		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: 5569373)									
ES2402504-001	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	<0.05	<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
ES2402506-001	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	<0.05	<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: 5569373)									
ES2402504-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.07	0.06	15.4	No Limit
ES2402506-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.10	0.10	0.0	0% - 50%

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: 5569373)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	118	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	113	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	112	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	104	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	103	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5569373)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	107	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	105	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	106	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	105	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	106	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	117	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	116	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5569373)								
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	125	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	98.6	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	108	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	109	57.6	145
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	110	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5569373)								

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: 5569373) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	111	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	122	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	118	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	105	71.4	144

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: 5569373)							
ES2402504-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	96.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	111	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	117	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	106	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	119	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5569373)							
ES2402504-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	102	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	105	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	110	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	107	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	111	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	101	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	96.1	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	101	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	123	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	127	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	118	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5569373)							
ES2402504-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	103	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	104	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	101	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	123	66.0	145

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: 5569373) - continued							
ES2402504-002	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	123	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	117	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	101	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5569373)							
ES2402504-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	101	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	118	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	127	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	103	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2402439**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 25-Jan-2024
Site	: NT_1302_PFASOMP_24	Issue Date	: 01-Feb-2024
Sampler	: [redacted]	No. of samples received	: 8
Order number	: 60612561/4.1	No. of samples analysed	: 8

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)								
1302_QC100_240124,	1302_QC300_240124,	**23-Jan-2024**	**31-Jan-2024**	21-Jul-2024	✓	**01-Feb-2024**	21-Jul-2024	✓
1302_QC400_240124,	1302_QC500_240124							
HDPE (no PTFE) (EP231X)								
1302_SW109_240124,	1302_SW300_240124,	**24-Jan-2024**	**31-Jan-2024**	22-Jul-2024	✓	**01-Feb-2024**	22-Jul-2024	✓
1302_SW170_240124,	1302_SW312_240124							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
1302_QC100_240124,	1302_QC300_240124,	**23-Jan-2024**	**31-Jan-2024**	21-Jul-2024	✓	**01-Feb-2024**	21-Jul-2024	✓
1302_QC400_240124,	1302_QC500_240124							
HDPE (no PTFE) (EP231X)								
1302_SW109_240124,	1302_SW300_240124,	**24-Jan-2024**	**31-Jan-2024**	22-Jul-2024	✓	**01-Feb-2024**	22-Jul-2024	✓
1302_SW170_240124,	1302_SW312_240124							
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
1302_QC100_240124,	1302_QC300_240124,	**23-Jan-2024**	**31-Jan-2024**	21-Jul-2024	✓	**01-Feb-2024**	21-Jul-2024	✓
1302_QC400_240124,	1302_QC500_240124							
HDPE (no PTFE) (EP231X)								
1302_SW109_240124,	1302_SW300_240124,	**24-Jan-2024**	**31-Jan-2024**	22-Jul-2024	✓	**01-Feb-2024**	22-Jul-2024	✓
1302_SW170_240124,	1302_SW312_240124							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
1302_QC100_240124,	1302_QC300_240124,	**23-Jan-2024**	**31-Jan-2024**	21-Jul-2024	✓	**01-Feb-2024**	21-Jul-2024	✓
1302_QC400_240124,	1302_QC500_240124							
HDPE (no PTFE) (EP231X)								
1302_SW109_240124,	1302_SW300_240124,	**24-Jan-2024**	**31-Jan-2024**	22-Jul-2024	✓	**01-Feb-2024**	22-Jul-2024	✓
1302_SW170_240124,	1302_SW312_240124							

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) 1302_QC100_240124, 1302_QC300_240124, 1302_QC400_240124, 1302_QC500_240124	**23-Jan-2024**	**31-Jan-2024**	21-Jul-2024	✓	**01-Feb-2024**	21-Jul-2024	✓
HDPE (no PTFE) (EP231X) 1302_SW109_240124, 1302_SW300_240124, 1302_SW170_240124, 1302_SW312_240124	**24-Jan-2024**	**31-Jan-2024**	22-Jul-2024	✓	**01-Feb-2024**	22-Jul-2024	✓

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	16	**12.50**	**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	1	16	**6.25**	**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 : **ES2404842**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted] NSW Australia 2164
E-mail	: [redacted]	E-mail	: Loren.Schiavon@ALSGlobal.com
Telephone	: ----	Telephone	: + [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_24	Page	: 1 of 3
Order number	: 60612561/4.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 63886	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NT_1302_SW_24		
Sampler	: [redacted]		

Dates

Date Samples Received	: 16-Feb-2024 09:00	Issue Date	: 16-Feb-2024
Client Requested Due Date	: 22-Feb-2024	Scheduled Reporting Date	: **22-Feb-2024**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 27.0'C - Ice present
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
- **Sample 1302_QC200_240215 forwarded to NMI for analysis.**
- **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 direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2404842-001	15-Feb-2024 11:10	1302_SW109_2401215	✓
ES2404842-002	15-Feb-2024 10:49	1302_SW300_240215	✓
ES2404842-003	15-Feb-2024 12:07	1302_SW170_240215	✓
ES2404842-004	15-Feb-2024 11:53	1302_SW312_240215	✓
ES2404842-005	15-Feb-2024 11:05	1302_QC300_240215	✓
ES2404842-006	15-Feb-2024 11:06	1302_QC400_240215	✓
ES2404842-007	15-Feb-2024 11:06	1302_QC500_240215	✓
ES2404842-008	15-Feb-2024 12:05	1302_QC100_240215	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2404842**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 16-Feb-2024 09:00
Order number	: 60612561/4.1	Date Analysis Commenced	: 16-Feb-2024
C-O-C number	: 63886	Issue Date	: 20-Feb-2024 17:00
Sampler	: [redacted]		
Site	: NT_1302_SW_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 8		
No. of samples analysed	: 8		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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	1302_SW109_2401215	1302_SW300_240215	1302_SW170_240215	1302_SW312_240215	1302_QC300_240215
				Sampling date / time	15-Feb-2024 11:10	15-Feb-2024 10:49	15-Feb-2024 12:07	15-Feb-2024 11:53	15-Feb-2024 11:05
Compound	CAS Number	LOR	Unit		ES2404842-001	ES2404842-002	ES2404842-003	ES2404842-004	ES2404842-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.08**	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.09**	**0.03**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.12**	**0.44**	**0.26**	**0.06**	<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		**0.26**	**0.82**	**0.54**	**0.38**	<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	**0.15**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.02**	**0.26**	**0.06**	**0.03**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.16**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.18**	**0.02**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.03**	<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: WATER (Matrix: WATER)				Sample ID	1302_SW109_2401215	1302_SW300_240215	1302_SW170_240215	1302_SW312_240215	1302_QC300_240215
				Sampling date / time	15-Feb-2024 11:10	15-Feb-2024 10:49	15-Feb-2024 12:07	15-Feb-2024 11:53	15-Feb-2024 11:05
Compound	CAS Number	LOR	Unit		ES2404842-001	ES2404842-002	ES2404842-003	ES2404842-004	ES2404842-005
					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		**0.40**	**2.23**	**0.94**	**0.47**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.38**	**1.26**	**0.80**	**0.44**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.40**	**2.09**	**0.91**	**0.47**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.2**	**109**	**97.1**	**96.4**	**104**
13C8-PFOA	----	0.02	%		**102**	**100**	**102**	**104**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC400_240215	1302_QC500_240215	1302_QC100_240215	----	----
				Sampling date / time	15-Feb-2024 11:06	15-Feb-2024 11:06	15-Feb-2024 12:05	----	----
Compound	CAS Number	LOR	Unit		ES2404842-006	ES2404842-007	ES2404842-008	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.03**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.04**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.28**	----	----
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	**0.66**	----	----
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	**0.06**	----	----
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	**0.02**	----	----
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	1302_QC400_240215	1302_QC500_240215	1302_QC100_240215	----	----
				Sampling date / time	15-Feb-2024 11:06	15-Feb-2024 11:06	15-Feb-2024 12:05	----	----
Compound	CAS Number	LOR	Unit		ES2404842-006	ES2404842-007	ES2404842-008	--------	--------
					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	**1.09**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.94**	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**1.05**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.1**	**97.9**	**109**	----	----
13C8-PFOA	----	0.02	%		**104**	**105**	**103**	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2404842**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Jordan Brookes	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 16-Feb-2024
Order number	: 60612561/4.1	Date Analysis Commenced	: 16-Feb-2024
C-O-C number	: 63886	Issue Date	: 20-Feb-2024
Sampler	: [redacted]		
Site	: NT_1302_SW_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 8		
No. of samples analysed	: 8		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5608495)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	78.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	93.2	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	81.8	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	89.2	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	81.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	83.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5608495)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	92.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	90.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	94.5	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.5	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	88.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.3	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	113	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	123	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	94.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5608495)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	85.1	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.6	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	97.3	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	85.8	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	88.9	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	91.1	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5608495)								

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: 5608495) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	82.3	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	111	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	86.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	80.9	71.4	144

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	: **ES2404842**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 16-Feb-2024
Site	: NT_1302_SW_24	Issue Date	: 20-Feb-2024
Sampler	: [redacted]	No. of samples received	: 8
Order number	: 60612561/4.1	No. of samples analysed	: 8

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		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	14	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	14	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)								
1302_SW109_2401215,	1302_SW300_240215,	**15-Feb-2024**	**19-Feb-2024**	13-Aug-2024	✓	**20-Feb-2024**	13-Aug-2024	✓
1302_SW170_240215,	1302_SW312_240215,							
1302_QC300_240215,	1302_QC400_240215,							
1302_QC500_240215,	1302_QC100_240215							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
1302_SW109_2401215,	1302_SW300_240215,	**15-Feb-2024**	**19-Feb-2024**	13-Aug-2024	✓	**20-Feb-2024**	13-Aug-2024	✓
1302_SW170_240215,	1302_SW312_240215,							
1302_QC300_240215,	1302_QC400_240215,							
1302_QC500_240215,	1302_QC100_240215							
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
1302_SW109_2401215,	1302_SW300_240215,	**15-Feb-2024**	**19-Feb-2024**	13-Aug-2024	✓	**20-Feb-2024**	13-Aug-2024	✓
1302_SW170_240215,	1302_SW312_240215,							
1302_QC300_240215,	1302_QC400_240215,							
1302_QC500_240215,	1302_QC100_240215							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
1302_SW109_2401215,	1302_SW300_240215,	**15-Feb-2024**	**19-Feb-2024**	13-Aug-2024	✓	**20-Feb-2024**	13-Aug-2024	✓
1302_SW170_240215,	1302_SW312_240215,							
1302_QC300_240215,	1302_QC400_240215,							
1302_QC500_240215,	1302_QC100_240215							

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)							
1302_SW109_2401215, 1302_SW300_240215, 1302_SW170_240215, 1302_SW312_240215, 1302_QC300_240215, 1302_QC400_240215, 1302_QC500_240215, 1302_QC100_240215	**15-Feb-2024**	**19-Feb-2024**	13-Aug-2024	✓	**20-Feb-2024**	13-Aug-2024	✓

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	14	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	14	**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	: **ES2407639**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: + [redacted]
Project	: NT_1302_PFASOMP_24	Page	: 1 of 3
Order number	: 60612561/4.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 64714	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NT_1302_PFASOMP_24		
Sampler	: [redacted]		

Dates

Date Samples Received	: 08-Mar-2024 13:30	Issue Date	: 11-Mar-2024
Client Requested Due Date	: 14-Mar-2024	Scheduled Reporting Date	: **14-Mar-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 16.9'C DRW 16.3"C 16.4'C 16.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 29 / 29

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
- [11/03/2024] This is an updated SRN which indicates the new sample ID as per client request, for this work order.
- **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.**
- **QC Forward analysis will be conducted by NMI.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2407639-001	06-Mar-2024 15:23	1302_SW104_240306	✓
ES2407639-002	06-Mar-2024 14:25	1302_SW106_240306	✓
ES2407639-003	06-Mar-2024 14:01	1302_SW108_240306	✓
ES2407639-004	06-Mar-2024 13:40	1302_SW109_240306	✓
ES2407639-005	06-Mar-2024 15:50	1302_SW112_240306	✓
ES2407639-006	06-Mar-2024 16:00	1302_SW113_240306	✓
ES2407639-007	06-Mar-2024 15:02	1302_SW114_240306	✓
ES2407639-008	06-Mar-2024 14:10	1302_SW115_240306	✓
ES2407639-009	06-Mar-2024 13:52	1302_SW168_240306	✓
ES2407639-010	06-Mar-2024 12:53	1302_SW120_240306	✓
ES2407639-011	06-Mar-2024 12:28	1302_SW124_240306	✓
ES2407639-012	06-Mar-2024 12:59	1302_SW125_240306	✓
ES2407639-013	06-Mar-2024 11:13	1302_SW132_240306	✓
ES2407639-014	06-Mar-2024 11:43	1302_SW133_240306	✓
ES2407639-015	06-Mar-2024 10:48	1302_SW143_240306	✓
ES2407639-016	06-Mar-2024 13:28	1302_SW300_240306	✓
ES2407639-017	06-Mar-2024 09:58	1302_SW152_240306	✓
ES2407639-018	06-Mar-2024 09:07	1302_SW160_240306	✓
ES2407639-019	06-Mar-2024 09:25	1302_SW162_240306	✓
ES2407639-020	06-Mar-2024 10:06	1302_SW170_240306	✓
ES2407639-021	06-Mar-2024 09:44	1302_SW178_240306	✓
ES2407639-022	06-Mar-2024 09:33	1302_SW181_240306	✓
ES2407639-023	06-Mar-2024 11:46	1302_QC100_240306	✓
ES2407639-025	06-Mar-2024 13:54	1302_QC101_240306	✓
ES2407639-027	06-Mar-2024 15:07	1302_QC102_240306	✓
ES2407639-029	06-Mar-2024 13:42	1302_QC300_240306	✓
ES2407639-030	06-Mar-2024 13:43	1302_QC400_240306	✓
ES2407639-031	06-Mar-2024 13:43	1302_QC500_240306	✓
ES2407639-032	06-Mar-2024 10:16	1302_SW312_240306	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2407639**	Page	: 1 of 15
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 08-Mar-2024 13:30
Order number	: 60612561/4.1	Date Analysis Commenced	: 11-Mar-2024
C-O-C number	: 64714	Issue Date	: 13-Mar-2024 10:11
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 29		
No. of samples analysed	: 29		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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	1302_SW104_240306	1302_SW106_240306	1302_SW108_240306	1302_SW109_240306	1302_SW112_240306
				Sampling date / time	06-Mar-2024 15:23	06-Mar-2024 14:25	06-Mar-2024 14:01	06-Mar-2024 13:40	06-Mar-2024 15:50
Compound	CAS Number	LOR	Unit		ES2407639-001	ES2407639-002	ES2407639-003	ES2407639-004	ES2407639-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.11**	**0.02**	<0.02	**0.02**	**0.02**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	**0.02**	**0.02**	**0.02**	**0.02**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.00**	**0.18**	**0.16**	**0.18**	**0.18**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.06**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.78**	**0.40**	**0.36**	**0.38**	**0.39**
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		**0.20**	**0.04**	**0.04**	**0.04**	**0.04**
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		**0.05**	**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: WATER (Matrix: WATER)				Sample ID	1302_SW104_240306	1302_SW106_240306	1302_SW108_240306	1302_SW109_240306	1302_SW112_240306
				Sampling date / time	06-Mar-2024 15:23	06-Mar-2024 14:25	06-Mar-2024 14:01	06-Mar-2024 13:40	06-Mar-2024 15:50
Compound	CAS Number	LOR	Unit		ES2407639-001	ES2407639-002	ES2407639-003	ES2407639-004	ES2407639-005
					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		**3.38**	**0.67**	**0.59**	**0.65**	**0.66**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.78**	**0.58**	**0.52**	**0.56**	**0.57**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**3.20**	**0.65**	**0.57**	**0.63**	**0.64**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.2**	**102**	**95.8**	**104**	**99.4**
13C8-PFOA	----	0.02	%		**97.3**	**95.3**	**100**	**98.5**	**98.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW113_240306	1302_SW114_240306	1302_SW115_240306	1302_SW168_240306	1302_SW120_240306
				Sampling date / time	06-Mar-2024 16:00	06-Mar-2024 15:02	06-Mar-2024 14:10	06-Mar-2024 13:52	06-Mar-2024 12:53
Compound	CAS Number	LOR	Unit		ES2407639-006	ES2407639-007	ES2407639-008	ES2407639-009	ES2407639-010
					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	**0.04**	**0.03**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.15**	<0.02	**0.05**	**0.04**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.10**	**1.20**	<0.01	**0.30**	**0.37**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.08**	<0.02	**0.02**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.23**	**2.54**	<0.01	**0.65**	**0.58**
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	**0.06**	<0.02	**0.03**	**0.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.02**	**0.28**	<0.02	**0.11**	**0.13**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.04**	<0.02	**0.02**	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.07**	<0.01	**0.04**	**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: WATER (Matrix: WATER)				Sample ID	1302_SW113_240306	1302_SW114_240306	1302_SW115_240306	1302_SW168_240306	1302_SW120_240306
				Sampling date / time	06-Mar-2024 16:00	06-Mar-2024 15:02	06-Mar-2024 14:10	06-Mar-2024 13:52	06-Mar-2024 12:53
Compound	CAS Number	LOR	Unit		ES2407639-006	ES2407639-007	ES2407639-008	ES2407639-009	ES2407639-010
					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	**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		**0.35**	**4.56**	<0.01	**1.26**	**1.33**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.33**	**3.74**	<0.01	**0.95**	**0.95**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.35**	**4.33**	<0.01	**1.19**	**1.29**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.9**	**99.0**	**99.4**	**104**	**100**
13C8-PFOA	----	0.02	%		**99.6**	**97.8**	**102**	**100**	**99.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW124_240306	1302_SW125_240306	1302_SW132_240306	1302_SW133_240306	1302_SW143_240306
				Sampling date / time	06-Mar-2024 12:28	06-Mar-2024 12:59	06-Mar-2024 11:13	06-Mar-2024 11:43	06-Mar-2024 10:48
Compound	CAS Number	LOR	Unit		ES2407639-011	ES2407639-012	ES2407639-013	ES2407639-014	ES2407639-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.12**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.15**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	**1.34**	**0.07**	**0.01**	**0.02**
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		**0.02**	**2.40**	**0.18**	**0.02**	**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		<0.02	**0.28**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.44**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.09**	<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: WATER (Matrix: WATER)				Sample ID	1302_SW124_240306	1302_SW125_240306	1302_SW132_240306	1302_SW133_240306	1302_SW143_240306
				Sampling date / time	06-Mar-2024 12:28	06-Mar-2024 12:59	06-Mar-2024 11:13	06-Mar-2024 11:43	06-Mar-2024 10:48
Compound	CAS Number	LOR	Unit		ES2407639-011	ES2407639-012	ES2407639-013	ES2407639-014	ES2407639-015
					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	**0.37**	<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**	**5.36**	**0.25**	**0.03**	**0.08**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.04**	**3.74**	**0.25**	**0.03**	**0.08**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.04**	**5.12**	**0.25**	**0.03**	**0.08**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.1**	**96.7**	**104**	**98.9**	**109**
13C8-PFOA	----	0.02	%		**96.5**	**97.8**	**97.2**	**101**	**99.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW300_240306	1302_SW152_240306	1302_SW160_240306	1302_SW162_240306	1302_SW170_240306
				Sampling date / time	06-Mar-2024 13:28	06-Mar-2024 09:58	06-Mar-2024 09:07	06-Mar-2024 09:25	06-Mar-2024 10:06
Compound	CAS Number	LOR	Unit		ES2407639-016	ES2407639-017	ES2407639-018	ES2407639-019	ES2407639-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.15**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.14**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.73**	**0.06**	**0.16**	<0.01	**0.09**
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**	**0.21**	**0.32**	**0.06**	**0.25**
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		**0.28**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.45**	<0.02	**0.03**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.26**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.25**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.04**	<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: WATER (Matrix: WATER)				Sample ID	1302_SW300_240306	1302_SW152_240306	1302_SW160_240306	1302_SW162_240306	1302_SW170_240306
				Sampling date / time	06-Mar-2024 13:28	06-Mar-2024 09:58	06-Mar-2024 09:07	06-Mar-2024 09:25	06-Mar-2024 10:06
Compound	CAS Number	LOR	Unit		ES2407639-016	ES2407639-017	ES2407639-018	ES2407639-019	ES2407639-020
					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		**3.36**	**0.27**	**0.51**	**0.06**	**0.34**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.57**	**0.27**	**0.48**	**0.06**	**0.34**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**3.16**	**0.27**	**0.51**	**0.06**	**0.34**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**92.8**	**101**	**95.8**	**99.0**	**111**
13C8-PFOA	----	0.02	%		**97.3**	**99.0**	**97.4**	**97.4**	**99.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW178_240306	1302_SW181_240306	1302_QC100_240306	1302_QC101_240306	1302_QC102_240306
				Sampling date / time	06-Mar-2024 09:44	06-Mar-2024 09:33	06-Mar-2024 11:46	06-Mar-2024 13:54	06-Mar-2024 15:07
Compound	CAS Number	LOR	Unit		ES2407639-021	ES2407639-022	ES2407639-023	ES2407639-025	ES2407639-027
					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	**0.05**	**0.13**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.05**	**0.14**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.01**	<0.01	<0.01	**0.34**	**1.24**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.02**	**0.08**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.05**	**0.04**	**0.01**	**0.66**	**2.35**
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**	**0.06**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.11**	**0.25**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.05**	**0.07**
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: WATER (Matrix: WATER)				Sample ID	1302_SW178_240306	1302_SW181_240306	1302_QC100_240306	1302_QC101_240306	1302_QC102_240306
				Sampling date / time	06-Mar-2024 09:44	06-Mar-2024 09:33	06-Mar-2024 11:46	06-Mar-2024 13:54	06-Mar-2024 15:07
Compound	CAS Number	LOR	Unit		ES2407639-021	ES2407639-022	ES2407639-023	ES2407639-025	ES2407639-027
					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		**0.06**	**0.04**	**0.01**	**1.34**	**4.35**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.06**	**0.04**	**0.01**	**1.00**	**3.59**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	**0.04**	**0.01**	**1.27**	**4.13**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**97.9**	**105**	**103**	**103**
13C8-PFOA	----	0.02	%		**104**	**100**	**98.7**	**100**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC300_240306	1302_QC400_240306	1302_QC500_240306	1302_SW312_240306	----
				Sampling date / time	06-Mar-2024 13:42	06-Mar-2024 13:43	06-Mar-2024 13:43	06-Mar-2024 10:16	----
Compound	CAS Number	LOR	Unit		ES2407639-029	ES2407639-030	ES2407639-031	ES2407639-032	--------
					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	**0.47**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**3.20**	----
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	**0.06**	----
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	**0.03**	----
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	1302_QC300_240306	1302_QC400_240306	1302_QC500_240306	1302_SW312_240306	----
				Sampling date / time	06-Mar-2024 13:42	06-Mar-2024 13:43	06-Mar-2024 13:43	06-Mar-2024 10:16	----
Compound	CAS Number	LOR	Unit		ES2407639-029	ES2407639-030	ES2407639-031	ES2407639-032	--------
					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	**3.82**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**3.67**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	**3.76**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**110**	**103**	**101**	**105**	----
13C8-PFOA	----	0.02	%		**99.7**	**102**	**101**	**102**	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2407639**	Page	: 1 of 8
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: + [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 08-Mar-2024
Order number	: 60612561/4.1	Date Analysis Commenced	: 11-Mar-2024
C-O-C number	: 64714	Issue Date	: 13-Mar-2024
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 29		
No. of samples analysed	: 29		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5654006)									
ES2407500-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.08	0.07	16.0	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
ES2407500-015	Anonymous	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
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5654006)									
ES2407500-001	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

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: 5654006) - continued									
ES2407500-001	Anonymous	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
ES2407500-015	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: 5654006)									
ES2407500-001	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
		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
ES2407500-015	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

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: 5654006)									
ES2407500-001	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	<0.05	<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
ES2407500-015	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: 5654006)									
ES2407500-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.12	0.11	8.7	0% - 50%
ES2407500-015	Anonymous	EP231X: Sum of PFAS	----	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: 5653991)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	86.3	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	107	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	97.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	90.0	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	83.7	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5654006)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	75.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	88.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	89.2	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	85.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	77.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	74.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5653991)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	83.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	93.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	98.1	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.1	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	95.1	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	95.4	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	92.1	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5654006)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	81.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	87.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	85.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	87.9	72.0	130

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: 5654006) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.9	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.3	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	83.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.1	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	93.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.1	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	96.3	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5653991)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	89.1	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	101	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	85.7	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	99.5	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	93.1	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	98.3	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.3	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5654006)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	86.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	98.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	92.3	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	99.6	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	85.7	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	72.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	83.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5653991)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	88.9	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	103	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	91.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	93.4	71.4	144

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: 5654006)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	105	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	93.5	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	101	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	104	71.4	144

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: 5654006)							
ES2407500-005	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	83.7	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	83.9	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	69.6	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	91.2	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	78.2	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	88.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5654006)							
ES2407500-005	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	84.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	90.3	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	87.5	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	91.7	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	92.3	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	84.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	85.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	93.0	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	84.9	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	98.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5654006)							
ES2407500-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	80.8	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	84.9	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	86.6	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	91.4	66.0	145

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: 5654006) - continued							
ES2407500-005	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	80.4	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	76.0	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	86.7	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5654006)							
ES2407500-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	84.1	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	89.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	91.9	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	90.3	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2407639**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	[redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 08-Mar-2024
Site	: NT_1302_PFASOMP_24	Issue Date	: 13-Mar-2024
Sampler	: [redacted]	No. of samples received	: 29
Order number	: 60612561/4.1	No. of samples analysed	: 29

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		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	34	5.88	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	34	2.94	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)							
1302_SW104_240306, 1302_SW106_240306, 1302_SW108_240306, 1302_SW109_240306, 1302_SW112_240306, 1302_SW113_240306, 1302_SW114_240306, 1302_SW115_240306, 1302_SW168_240306, 1302_SW120_240306, 1302_SW124_240306, 1302_SW125_240306, 1302_SW132_240306, 1302_SW133_240306, 1302_SW143_240306, 1302_SW300_240306, 1302_SW152_240306, 1302_SW160_240306, 1302_SW162_240306, 1302_SW170_240306, 1302_SW178_240306, 1302_SW181_240306, 1302_QC100_240306, 1302_QC101_240306, 1302_QC102_240306, 1302_QC300_240306, 1302_QC400_240306, 1302_QC500_240306, 1302_SW312_240306	**06-Mar-2024**	**12-Mar-2024**	02-Sep-2024	✓	**13-Mar-2024**	02-Sep-2024	✓

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)							
1302_SW104_240306, 1302_SW106_240306, 1302_SW108_240306, 1302_SW109_240306, 1302_SW112_240306, 1302_SW113_240306, 1302_SW114_240306, 1302_SW115_240306, 1302_SW168_240306, 1302_SW120_240306, 1302_SW124_240306, 1302_SW125_240306, 1302_SW132_240306, 1302_SW133_240306, 1302_SW143_240306, 1302_SW300_240306, 1302_SW152_240306, 1302_SW160_240306, 1302_SW162_240306, 1302_SW170_240306, 1302_SW178_240306, 1302_SW181_240306, 1302_QC100_240306, 1302_QC101_240306, 1302_QC102_240306, 1302_QC300_240306, 1302_QC400_240306, 1302_QC500_240306, 1302_SW312_240306	**06-Mar-2024**	**12-Mar-2024**	02-Sep-2024	✓	**13-Mar-2024**	02-Sep-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
1302_SW104_240306, 1302_SW106_240306, 1302_SW108_240306, 1302_SW109_240306, 1302_SW112_240306, 1302_SW113_240306, 1302_SW114_240306, 1302_SW115_240306, 1302_SW168_240306, 1302_SW120_240306, 1302_SW124_240306, 1302_SW125_240306, 1302_SW132_240306, 1302_SW133_240306, 1302_SW143_240306, 1302_SW300_240306, 1302_SW152_240306, 1302_SW160_240306, 1302_SW162_240306, 1302_SW170_240306, 1302_SW178_240306, 1302_SW181_240306, 1302_QC100_240306, 1302_QC101_240306, 1302_QC102_240306, 1302_QC300_240306, 1302_QC400_240306, 1302_QC500_240306, 1302_SW312_240306	**06-Mar-2024**	**12-Mar-2024**	02-Sep-2024	✓	**13-Mar-2024**	02-Sep-2024	✓

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)							
1302_SW104_240306, 1302_SW106_240306, 1302_SW108_240306, 1302_SW109_240306, 1302_SW112_240306, 1302_SW113_240306, 1302_SW114_240306, 1302_SW115_240306, 1302_SW168_240306, 1302_SW120_240306, 1302_SW124_240306, 1302_SW125_240306, 1302_SW132_240306, 1302_SW133_240306, 1302_SW143_240306, 1302_SW300_240306, 1302_SW152_240306, 1302_SW160_240306, 1302_SW162_240306, 1302_SW170_240306, 1302_SW178_240306, 1302_SW181_240306, 1302_QC100_240306, 1302_QC101_240306, 1302_QC102_240306, 1302_QC300_240306, 1302_QC400_240306, 1302_QC500_240306, 1302_SW312_240306	**06-Mar-2024**	**12-Mar-2024**	02-Sep-2024	✓	**13-Mar-2024**	02-Sep-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
1302_SW104_240306, 1302_SW106_240306, 1302_SW108_240306, 1302_SW109_240306, 1302_SW112_240306, 1302_SW113_240306, 1302_SW114_240306, 1302_SW115_240306, 1302_SW168_240306, 1302_SW120_240306, 1302_SW124_240306, 1302_SW125_240306, 1302_SW132_240306, 1302_SW133_240306, 1302_SW143_240306, 1302_SW300_240306, 1302_SW152_240306, 1302_SW160_240306, 1302_SW162_240306, 1302_SW170_240306, 1302_SW178_240306, 1302_SW181_240306, 1302_QC100_240306, 1302_QC101_240306, 1302_QC102_240306, 1302_QC300_240306, 1302_QC400_240306, 1302_QC500_240306, 1302_SW312_240306	**06-Mar-2024**	**12-Mar-2024**	02-Sep-2024	✓	**13-Mar-2024**	02-Sep-2024	✓

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	34	**5.88**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	34	**2.94**	**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 5.4, 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	: **ES2414224**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_24	Page	: 1 of 3
Order number	: 60612561/4.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 67055	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NT_1302_SW_24		
Sampler	: [redacted]		

Dates

Date Samples Received	: 02-May-2024 14:45	Issue Date	: 02-May-2024
Client Requested Due Date	: 09-May-2024	Scheduled Reporting Date	: **09-May-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 18.0'C DRW 13.9'C 13.2'C 9.9'C SYD - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 6 / 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 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.**
- **QC Forward analysis will be conducted by NMI.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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 (30 analytes)
ES2414224-001	30-Apr-2024 14:58	1302_SW109_240430	✓
ES2414224-002	30-Apr-2024 15:00	1302_SW170_240430	✓
ES2414224-003	30-Apr-2024 15:01	1302_QC100_240430	✓
ES2414224-005	30-Apr-2024 15:07	1302_QC300_240430	✓
ES2414224-006	30-Apr-2024 15:09	1302_QC400_240430	✓
ES2414224-007	30-Apr-2024 15:12	1302_QC500_240430	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2414224**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 02-May-2024 14:45
Order number	: 60612561/4.1	Date Analysis Commenced	: 03-May-2024
C-O-C number	: 67055	Issue Date	: 08-May-2024 11:26
Sampler	: [redacted]		
Site	: NT_1302_SW_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 6		
No. of samples analysed	: 6		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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 QSM5.4 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 or as per tables in USEPA 1633 where listed. 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 and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_SW109_240430	1302_SW170_240430	1302_QC100_240430	1302_QC300_240430	1302_QC400_240430
				Sampling date / time	30-Apr-2024 14:58	30-Apr-2024 15:00	30-Apr-2024 15:01	30-Apr-2024 15:07	30-Apr-2024 15:09
Compound	CAS Number	LOR	Unit		ES2414224-001	ES2414224-002	ES2414224-003	ES2414224-005	ES2414224-006
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	<0.02	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.04**	<0.02	**0.04**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.28**	**0.05**	**0.27**	<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		**0.54**	**0.14**	**0.48**	<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		**0.06**	<0.02	**0.06**	<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: WATER (Matrix: WATER)				Sample ID	1302_SW109_240430	1302_SW170_240430	1302_QC100_240430	1302_QC300_240430	1302_QC400_240430
				Sampling date / time	30-Apr-2024 14:58	30-Apr-2024 15:00	30-Apr-2024 15:01	30-Apr-2024 15:07	30-Apr-2024 15:09
Compound	CAS Number	LOR	Unit		ES2414224-001	ES2414224-002	ES2414224-003	ES2414224-005	ES2414224-006
					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		**0.96**	**0.19**	**0.89**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.82**	**0.19**	**0.75**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.92**	**0.19**	**0.85**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.5**	**97.3**	**93.7**	**96.6**	**91.0**
13C8-PFOA	----	0.02	%		**95.3**	**98.2**	**93.4**	**94.4**	**94.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC500_240430	----	----	----	----
				Sampling date / time	30-Apr-2024 15:12	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2414224-007	--------	--------	--------	--------
					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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC500_240430	----	----	----	----
				Sampling date / time	30-Apr-2024 15:12	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2414224-007	--------	--------	--------	--------
					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		<0.05	----	----	----	----
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	%		**92.4**	----	----	----	----
13C8-PFOA	----	0.02	%		**96.3**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2414224**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: ----	Telephone	[redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 02-May-2024
Order number	: 60612561/4.1	Date Analysis Commenced	: 03-May-2024
C-O-C number	: 67055	Issue Date	: 08-May-2024
Sampler	: [redacted]		
Site	: NT_1302_SW_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 6		
No. of samples analysed	: 6		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5770472)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	81.0	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	97.5	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	87.1	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	0.25 µg/L	89.0	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5770472)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	97.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	94.5	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	100	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	95.9	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	99.5	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	94.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5770472)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	93.3	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	84.3	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	78.0	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	100	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.5	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	107	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.7	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5770472)								

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: 5770472) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	105	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	95.1	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	95.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	77.1	71.4	144

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	: **ES2414224**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	[redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 02-May-2024
Site	: NT_1302_SW_24	Issue Date	: 08-May-2024
Sampler	: [redacted]	No. of samples received	: 6
Order number	: 60612561/4.1	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

- **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		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	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)								
1302_SW109_240430,	1302_SW170_240430,	**30-Apr-2024**	**07-May-2024**	27-Oct-2024	✓	**08-May-2024**	27-Oct-2024	✓
1302_QC100_240430,	1302_QC300_240430,							
1302_QC400_240430,	1302_QC500_240430							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
1302_SW109_240430,	1302_SW170_240430,	**30-Apr-2024**	**07-May-2024**	27-Oct-2024	✓	**08-May-2024**	27-Oct-2024	✓
1302_QC100_240430,	1302_QC300_240430,							
1302_QC400_240430,	1302_QC500_240430							
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
1302_SW109_240430,	1302_SW170_240430,	**30-Apr-2024**	**07-May-2024**	27-Oct-2024	✓	**08-May-2024**	27-Oct-2024	✓
1302_QC100_240430,	1302_QC300_240430,							
1302_QC400_240430,	1302_QC500_240430							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
1302_SW109_240430,	1302_SW170_240430,	**30-Apr-2024**	**07-May-2024**	27-Oct-2024	✓	**08-May-2024**	27-Oct-2024	✓
1302_QC100_240430,	1302_QC300_240430,							
1302_QC400_240430,	1302_QC500_240430							

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)							
1302_SW109_240430, 1302_SW170_240430, 1302_QC100_240430, 1302_QC300_240430, 1302_QC400_240430, 1302_QC500_240430	**30-Apr-2024**	**07-May-2024**	27-Oct-2024	✓	**08-May-2024**	27-Oct-2024	✓

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	19	**0.00**	**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	0	19	**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 5.4, 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	: **ES2337724**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_23	Page	: 1 of 3
Order number	: 60612561	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 59290	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NT_1302_PFASOMP_23		
Sampler	: [redacted]		

Dates

Date Samples Received	: 02-Nov-2023 17:05	Issue Date	: 03-Nov-2023
Client Requested Due Date	: 09-Nov-2023	Scheduled Reporting Date	: **09-Nov-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 26.8'C DRW 11.5'C 12.3'C 11.8'C SYD - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 36 / 36

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 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.**
- **QC Forward analysis will be conducted by NMI.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2337724-001	30-Oct-2023 14:29	1302_MW215_231030	✓
ES2337724-002	30-Oct-2023 15:34	1302_MW297_231031	✓
ES2337724-003	30-Oct-2023 14:49	1302_MW303_231030	✓
ES2337724-004	31-Oct-2023 07:13	1302_MW133_231031	✓
ES2337724-005	31-Oct-2023 08:57	1302_MW205_231031	✓
ES2337724-006	30-Oct-2023 12:33	1302_MW139_231030	✓
ES2337724-007	30-Oct-2023 14:13	1302_MW103_231030	✓
ES2337724-008	31-Oct-2023 08:40	1302_MW115_231031	✓
ES2337724-009	30-Oct-2023 16:59	1302_MW107_231030	✓
ES2337724-010	30-Oct-2023 12:19	1302_MW141_231030	✓
ES2337724-011	30-Oct-2023 11:57	1302_MW144_231030	✓
ES2337724-012	30-Oct-2023 17:24	1302_MW148_231030	✓
ES2337724-013	31-Oct-2023 09:22	1302_MW156_231031	✓
ES2337724-014	30-Oct-2023 17:32	1302_MW451_231030	✓
ES2337724-015	30-Oct-2023 17:17	1302_MW452_231030	✓
ES2337724-016	31-Oct-2023 09:58	1302_MW454_231031	✓
ES2337724-017	31-Oct-2023 13:07	1302_MW185_231031	✓
ES2337724-018	31-Oct-2023 13:25	1302_MW191_231031	✓
ES2337724-019	31-Oct-2023 13:40	1302_MW190_231031	✓
ES2337724-020	31-Oct-2023 13:59	1302_MW194_231031	✓
ES2337724-021	31-Oct-2023 13:52	1302_MW195_231031	✓
ES2337724-022	31-Oct-2023 06:33	1302_MW176_231031	✓
ES2337724-023	31-Oct-2023 12:04	1302_MW180_231031	✓
ES2337724-024	31-Oct-2023 06:49	1302_MW200_231031	✓
ES2337724-025	31-Oct-2023 12:38	1302_MW209_231031	✓
ES2337724-026	31-Oct-2023 12:22	1302_MW211_231031	✓
ES2337724-027	31-Oct-2023 14:27	1302_MW210_231031	✓
ES2337724-029	30-Oct-2023 09:14	1302_QC300_231030	✓
ES2337724-030	30-Oct-2023 09:15	1302_QC400_231030	✓
ES2337724-031	30-Oct-2023 09:17	1302_QC500_231030	✓
ES2337724-032	30-Oct-2023 12:10	1302_QC100_231030	✓
ES2337724-033	31-Oct-2023 06:38	1302_QC101_231031	✓
ES2337724-035	31-Oct-2023 08:14	1302_QC301_231031	✓
ES2337724-036	31-Oct-2023 08:14	1302_QC401_231031	✓
ES2337724-037	31-Oct-2023 08:15	1302_QC501_231031	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
ES2337724-039	31-Oct-2023 13:15	1302_QC102_231031	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES2409473**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted] DARWIN NT, AUSTRALIA 0801	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_24	Page	: 1 of 3
Order number	: 60612561/4.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 65431	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: RAAF Base Darwin		
Sampler	: [redacted]		

Dates

Date Samples Received	: 26-Mar-2024 08:30	Issue Date	: 16-Apr-2024
Client Requested Due Date	: 03-Apr-2024	Scheduled Reporting Date	: **03-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 7.8'C DRW
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 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.**
- **QC Forward analysis will be conducted by NMI.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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 (30 analytes)
ES2409473-001	19-Mar-2024 11:51	1302_MW453_240319	✓
ES2409473-002	22-Mar-2024 11:55	1302_MW197_240319	✓
ES2409473-003	20-Mar-2024 11:55	1302_MW115_240320	✓
ES2409473-004	20-Mar-2024 11:56	1302_MW205_240320	✓
ES2409473-005	20-Mar-2024 11:57	1302_MW156_240320	✓
ES2409473-006	20-Mar-2024 11:57	1302_QC100_240320	✓
ES2409473-008	20-Mar-2024 12:01	1302_QC300_240319	✓
ES2409473-009	22-Mar-2024 12:02	1302_QC400_240319	✓
ES2409473-010	20-Mar-2024 12:02	1302_QC500_240320	✓
ES2409473-011	20-Mar-2024 12:03	1302_QC401_240320	✓
ES2409473-012	22-Mar-2024 12:03	1302_QC301_240320	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2409473-AA**	Page	: 1 of 7
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	[redacted]	Contact	[redacted]
Address	[redacted]	Address	[redacted]
Telephone	: ----	Telephone	[redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 26-Mar-2024 08:30
Order number	: 60612561/4.1	Date Analysis Commenced	: 27-Mar-2024
C-O-C number	: 65431	Issue Date	: 16-Apr-2024 10:59
Sampler	: [redacted]		
Site	: RAAF Base Darwin		
Quote number	: SY/139/19 V3		
No. of samples received	: 10		
No. of samples analysed	: 10		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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 QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (16/04/2024): This report has been amended following the request to report specific sample ES2409473002 on a separate COA, received from Tiane McQuire on 12/04/2024.
- 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 or as per tables in USEPA 1633 where listed. 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 and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	1302_MW453_240319	1302_MW115_240320	1302_MW205_240320	1302_MW156_240320	1302_QC100_240320
				Sampling date / time	19-Mar-2024 11:51	20-Mar-2024 11:55	20-Mar-2024 11:56	20-Mar-2024 11:57	20-Mar-2024 11:57
Compound	CAS Number	LOR	Unit		ES2409473-001	ES2409473-003	ES2409473-004	ES2409473-005	ES2409473-006
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.91**	**1.38**	**0.06**	**0.23**	**0.24**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.88**	**2.01**	**0.06**	**0.26**	**0.27**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**4.75**	**15.9**	**0.47**	**2.36**	**2.44**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.26**	**1.85**	**0.03**	**0.16**	**0.17**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**5.47**	**51.0**	**0.92**	**6.55**	**5.99**
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		**1.3**	**0.3**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.86**	**0.50**	<0.02	**0.10**	**0.10**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**4.30**	**3.06**	**0.09**	**0.51**	**0.52**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**2.64**	**0.36**	<0.02	**0.06**	**0.06**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.50**	**1.20**	**0.02**	**0.13**	**0.13**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.32**	<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	**0.05**	<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	1302_MW453_240319	1302_MW115_240320	1302_MW205_240320	1302_MW156_240320	1302_QC100_240320
				Sampling date / time	19-Mar-2024 11:51	20-Mar-2024 11:55	20-Mar-2024 11:56	20-Mar-2024 11:57	20-Mar-2024 11:57
Compound	CAS Number	LOR	Unit		ES2409473-001	ES2409473-003	ES2409473-004	ES2409473-005	ES2409473-006
					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		**0.28**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		**0.15**	<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		**25.6**	**77.6**	**1.65**	**10.4**	**9.92**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**10.2**	**66.9**	**1.39**	**8.91**	**8.43**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**24.2**	**73.7**	**1.56**	**9.94**	**9.48**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.6**	**92.3**	**99.4**	**101**	**101**
13C8-PFOA	----	0.02	%		**104**	**105**	**102**	**104**	**101**

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	1302_QC300_240319	1302_QC400_240319	1302_QC500_240320	1302_QC401_240320	1302_QC301_240320
				Sampling date / time	20-Mar-2024 12:01	22-Mar-2024 12:02	20-Mar-2024 12:02	20-Mar-2024 12:03	22-Mar-2024 12:03
Compound	CAS Number	LOR	Unit		ES2409473-008	ES2409473-009	ES2409473-010	ES2409473-011	ES2409473-012
					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: GROUNDWATER (Matrix: WATER)				Sample ID	1302_QC300_240319	1302_QC400_240319	1302_QC500_240320	1302_QC401_240320	1302_QC301_240320
				Sampling date / time	20-Mar-2024 12:01	22-Mar-2024 12:02	20-Mar-2024 12:02	20-Mar-2024 12:03	22-Mar-2024 12:03
Compound	CAS Number	LOR	Unit		ES2409473-008	ES2409473-009	ES2409473-010	ES2409473-011	ES2409473-012
					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	%		**95.2**	**95.9**	**104**	**93.6**	**96.8**
13C8-PFOA	----	0.02	%		**103**	**101**	**106**	**104**	**103**

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

CERTIFICATE OF ANALYSIS

Work Order	: **ES2409473-AB**	Page	: 1 of 5
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 26-Mar-2024 08:30
Order number	: 60612561/4.1	Date Analysis Commenced	: 27-Mar-2024
C-O-C number	: 65431	Issue Date	: 16-Apr-2024 10:59
Sampler	: [redacted]		
Site	: RAAF Base Darwin		
Quote number	: SY/139/19 V3		
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]	[redacted]	Sydney Organics, Smithfield, NSW

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 QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (16/04/2024): This report has been amended following the request to report specific sample ES2409473002 on a separate COA, received from Tiane McQuire on 12/04/2024.
- 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 or as per tables in USEPA 1633 where listed. 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 and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	1302_MW197_240319	----	----	----	----
				Sampling date / time	22-Mar-2024 11:55	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2409473-002	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.07**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.10**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.35**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.08**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**4.34**	----	----	----	----
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		**0.05**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.27**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.08**	----	----	----	----
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: GROUNDWATER (Matrix: WATER)				Sample ID	1302_MW197_240319	----	----	----	----
				Sampling date / time	22-Mar-2024 11:55	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2409473-002	--------	--------	--------	--------
					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		<0.05	----	----	----	----
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		**6.37**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**5.69**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**6.19**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.9**	----	----	----	----
13C8-PFOA	----	0.02	%		**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: GROUNDWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2409473-AA**	Page	: 1 of 7
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	[redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 26-Mar-2024
Order number	: 60612561/4.1	Date Analysis Commenced	: 27-Mar-2024
C-O-C number	: 65431	Issue Date	: 16-Apr-2024
Sampler	: [redacted]		
Site	: RAAF Base Darwin		
Quote number	: SY/139/19 V3		
No. of samples received	: 10		
No. of samples analysed	: 10		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5691375)									
EB2409650-001	Anonymous	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
EB2409650-003	Anonymous	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
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5691375)									
EB2409650-001	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

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: 5691375) - continued									
EB2409650-001	Anonymous	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
EB2409650-003	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: 5691375)									
EB2409650-001	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
		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
EB2409650-003	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

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: 5691375)									
EB2409650-001	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	<0.05	<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
EB2409650-003	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: 5691375)									
EB2409650-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EB2409650-003	Anonymous	EP231X: Sum of PFAS	----	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: 5691375)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	96.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	109	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	119	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	94.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	97.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5691375)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	99.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	119	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	113	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	110	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	122	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	111	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5691375)								
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	110	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	106	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	99.7	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.4	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5691375)								

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: 5691375) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	111	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	103	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	115	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	121	71.4	144

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: 5691375)							
EB2409650-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	94.2	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	105	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	105	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	110	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	107	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	91.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5691375)							
EB2409650-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	99.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	103	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	118	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	110	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	107	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	111	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	108	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	111	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	111	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	112	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	107	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5691375)							
EB2409650-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	102	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	107	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	100	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	102	66.0	145

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: 5691375) - continued							
EB2409650-002	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	99.8	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	106	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	104	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5691375)							
EB2409650-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	98.3	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	107	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	105	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	105	71.4	144

QUALITY CONTROL REPORT

Work Order	: **ES2409473-AB**	Page	: 1 of 7
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: ----	Telephone	[redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 26-Mar-2024
Order number	: 60612561/4.1	Date Analysis Commenced	: 27-Mar-2024
C-O-C number	: 65431	Issue Date	: 16-Apr-2024
Sampler	[redacted]		
Site	: RAAF Base Darwin		
Quote number	: SY/139/19 V3		
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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5691375)									
EB2409650-001	Anonymous	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
EB2409650-003	Anonymous	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
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5691375)									
EB2409650-001	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

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: 5691375) - continued									
EB2409650-001	Anonymous	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
EB2409650-003	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: 5691375)									
EB2409650-001	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
		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
EB2409650-003	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

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: 5691375)									
EB2409650-001	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	<0.05	<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
EB2409650-003	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: 5691375)									
EB2409650-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EB2409650-003	Anonymous	EP231X: Sum of PFAS	----	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: 5691375)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	96.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	109	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	119	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	94.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	97.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5691375)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	99.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	119	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	113	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	110	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	122	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	111	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5691375)								
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	110	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	106	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	99.7	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.4	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5691375)								

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: 5691375) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	111	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	103	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	115	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	121	71.4	144

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: 5691375)							
EB2409650-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	94.2	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	105	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	105	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	110	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	107	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	91.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5691375)							
EB2409650-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	99.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	103	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	118	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	110	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	107	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	111	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	108	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	111	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	111	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	112	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	107	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5691375)							
EB2409650-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	102	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	107	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	100	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	102	66.0	145

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: 5691375) - continued							
EB2409650-002	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	99.8	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	106	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	104	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5691375)							
EB2409650-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	98.3	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	107	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	105	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	105	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2409473**	Page	: 1 of 5
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 26-Mar-2024
Site	: RAAF Base Darwin	Issue Date	: 16-Apr-2024
Sampler	: [redacted]	No. of samples received	: 11
Order number	: 60612561/4.1	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

- **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) 1302_MW453_240319	**19-Mar-2024**	**28-Mar-2024**	15-Sep-2024	✓	**03-Apr-2024**	15-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW115_240320, 1302_MW205_240320, 1302_MW156_240320, 1302_QC100_240320, 1302_QC300_240319, 1302_QC500_240320, 1302_QC401_240320	**20-Mar-2024**	**28-Mar-2024**	16-Sep-2024	✓	**03-Apr-2024**	16-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW197_240319, 1302_QC400_240319, 1302_QC301_240320	**22-Mar-2024**	**28-Mar-2024**	18-Sep-2024	✓	**03-Apr-2024**	18-Sep-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 1302_MW453_240319	**19-Mar-2024**	**28-Mar-2024**	15-Sep-2024	✓	**03-Apr-2024**	15-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW115_240320, 1302_MW205_240320, 1302_MW156_240320, 1302_QC100_240320, 1302_QC300_240319, 1302_QC500_240320, 1302_QC401_240320	**20-Mar-2024**	**28-Mar-2024**	16-Sep-2024	✓	**03-Apr-2024**	16-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW197_240319, 1302_QC400_240319, 1302_QC301_240320	**22-Mar-2024**	**28-Mar-2024**	18-Sep-2024	✓	**03-Apr-2024**	18-Sep-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 1302_MW453_240319	**19-Mar-2024**	**28-Mar-2024**	15-Sep-2024	✓	**03-Apr-2024**	15-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW115_240320, 1302_MW205_240320, 1302_MW156_240320, 1302_QC100_240320, 1302_QC300_240319, 1302_QC500_240320, 1302_QC401_240320	**20-Mar-2024**	**28-Mar-2024**	16-Sep-2024	✓	**03-Apr-2024**	16-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW197_240319, 1302_QC400_240319, 1302_QC301_240320	**22-Mar-2024**	**28-Mar-2024**	18-Sep-2024	✓	**03-Apr-2024**	18-Sep-2024	✓

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) 1302_MW453_240319	**19-Mar-2024**	**28-Mar-2024**	15-Sep-2024	✓	**03-Apr-2024**	15-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW115_240320, 1302_MW205_240320, 1302_MW156_240320, 1302_QC100_240320, 1302_QC300_240319, 1302_QC500_240320, 1302_QC401_240320	**20-Mar-2024**	**28-Mar-2024**	16-Sep-2024	✓	**03-Apr-2024**	16-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW197_240319, 1302_QC400_240319, 1302_QC301_240320	**22-Mar-2024**	**28-Mar-2024**	18-Sep-2024	✓	**03-Apr-2024**	18-Sep-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 1302_MW453_240319	**19-Mar-2024**	**28-Mar-2024**	15-Sep-2024	✓	**03-Apr-2024**	15-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW115_240320, 1302_MW205_240320, 1302_MW156_240320, 1302_QC100_240320, 1302_QC300_240319, 1302_QC500_240320, 1302_QC401_240320	**20-Mar-2024**	**28-Mar-2024**	16-Sep-2024	✓	**03-Apr-2024**	16-Sep-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW197_240319, 1302_QC400_240319, 1302_QC301_240320	**22-Mar-2024**	**28-Mar-2024**	18-Sep-2024	✓	**03-Apr-2024**	18-Sep-2024	✓

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	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**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 5.4, 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.

CERTIFICATE OF ANALYSIS

Work Order	: **ES2337724**	Page	: 1 of 19
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 02-Nov-2023 17:05
Order number	: 60612561	Date Analysis Commenced	: 03-Nov-2023
C-O-C number	: 59290	Issue Date	: 08-Nov-2023 12:12
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_23		
Quote number	: SY/139/19 V3		
No. of samples received	: 36		
No. of samples analysed	: 36		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- 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	1302_MW215_231030	1302_MW297_231031	1302_MW303_231030	1302_MW133_231031	1302_MW205_231031
				Sampling date / time	30-Oct-2023 14:29	30-Oct-2023 15:34	30-Oct-2023 14:49	31-Oct-2023 07:13	31-Oct-2023 08:57
Compound	CAS Number	LOR	Unit		ES2337724-001	ES2337724-002	ES2337724-003	ES2337724-004	ES2337724-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.11**	**0.74**	**4.72**	**0.43**	**0.23**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	**0.76**	**4.98**	**0.48**	**0.26**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.19**	**6.08**	**33.6**	**5.39**	**2.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.10**	**0.73**	**2.62**	**0.66**	**0.14**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.40**	**32.9**	**60.1**	**31.6**	**3.88**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	<0.2	**1.1**	<0.2	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.50**	**0.28**	**1.56**	**0.32**	**0.06**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.51**	**1.61**	**9.06**	**1.93**	**0.30**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.10**	**0.27**	**1.20**	**0.17**	**0.04**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	**0.66**	**2.78**	**0.50**	**0.10**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.05	**0.06**	<0.05	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW215_231030	1302_MW297_231031	1302_MW303_231030	1302_MW133_231031	1302_MW205_231031
				Sampling date / time	30-Oct-2023 14:29	30-Oct-2023 15:34	30-Oct-2023 14:49	31-Oct-2023 07:13	31-Oct-2023 08:57
Compound	CAS Number	LOR	Unit		ES2337724-001	ES2337724-002	ES2337724-003	ES2337724-004	ES2337724-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.12	<0.12	<0.12	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.05	<0.05	<0.05	<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		**1.81**	<0.05	**0.05**	**0.12**	<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		**8.00**	**44.0**	**122**	**41.6**	**7.06**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.59**	**39.0**	**93.7**	**37.0**	**5.93**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**7.78**	**42.5**	**114**	**40.5**	**6.66**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**108**	**104**	**93.9**	**107**	**104**
13C8-PFOA	----	0.02	%		**106**	**110**	**110**	**117**	**106**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW139_231030	1302_MW103_231030	1302_MW115_231031	1302_MW107_231030	1302_MW141_231030
				Sampling date / time	30-Oct-2023 12:33	30-Oct-2023 14:13	31-Oct-2023 08:40	30-Oct-2023 16:59	30-Oct-2023 12:19
Compound	CAS Number	LOR	Unit		ES2337724-006	ES2337724-007	ES2337724-008	ES2337724-009	ES2337724-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.05**	**0.24**	**3.92**	**0.23**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	**0.35**	**3.89**	**0.31**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.41**	**3.66**	**27.2**	**2.67**	**0.15**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.03**	**0.27**	**4.38**	**0.18**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.15**	**9.93**	**201**	**5.48**	**0.17**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	**0.13**	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.1**	**0.9**	**0.1**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.36**	**1.54**	**0.27**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.08**	**0.71**	**7.22**	**0.59**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.10**	**0.81**	**0.09**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	**0.19**	**2.36**	**0.14**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	**0.16**	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW139_231030	1302_MW103_231030	1302_MW115_231031	1302_MW107_231030	1302_MW141_231030
				Sampling date / time	30-Oct-2023 12:33	30-Oct-2023 14:13	31-Oct-2023 08:40	30-Oct-2023 16:59	30-Oct-2023 12:19
Compound	CAS Number	LOR	Unit		ES2337724-006	ES2337724-007	ES2337724-008	ES2337724-009	ES2337724-010
					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	<0.12	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.05	<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	**1.89**	<0.05	**1.21**	<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		**1.79**	**17.8**	**254**	**11.3**	**0.32**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.56**	**13.6**	**228**	**8.15**	**0.32**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.71**	**17.2**	**245**	**10.8**	**0.32**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**107**	**97.8**	**95.1**	**99.8**
13C8-PFOA	----	0.02	%		**104**	**101**	**106**	**104**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW144_231030	1302_MW148_231030	1302_MW156_231031	1302_MW451_231030	1302_MW452_231030
				Sampling date / time	30-Oct-2023 11:57	30-Oct-2023 17:24	31-Oct-2023 09:22	30-Oct-2023 17:32	30-Oct-2023 17:17
Compound	CAS Number	LOR	Unit		ES2337724-011	ES2337724-012	ES2337724-013	ES2337724-014	ES2337724-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.18**	**0.18**	**0.14**	<0.02	**0.09**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.19**	**0.21**	**0.16**	<0.02	**0.13**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.52**	**2.12**	**1.44**	<0.01	**1.20**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.11**	**0.20**	**0.12**	<0.02	**0.07**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.08**	**5.67**	**3.81**	<0.01	**2.56**
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**	**0.05**	**0.06**	<0.02	**0.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.24**	**0.24**	**0.26**	<0.02	**0.19**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	**0.04**	**0.03**	<0.02	**0.04**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	**0.10**	**0.07**	<0.01	**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: WATER (Matrix: WATER)				Sample ID	1302_MW144_231030	1302_MW148_231030	1302_MW156_231031	1302_MW451_231030	1302_MW452_231030
				Sampling date / time	30-Oct-2023 11:57	30-Oct-2023 17:24	31-Oct-2023 09:22	30-Oct-2023 17:32	30-Oct-2023 17:17
Compound	CAS Number	LOR	Unit		ES2337724-011	ES2337724-012	ES2337724-013	ES2337724-014	ES2337724-015
					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	**0.14**
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		**5.45**	**8.81**	**6.09**	<0.01	**4.56**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.60**	**7.79**	**5.25**	<0.01	**3.76**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**5.15**	**8.40**	**5.81**	<0.01	**4.36**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**110**	**102**	**101**	**97.8**
13C8-PFOA	----	0.02	%		**103**	**105**	**106**	**99.2**	**105**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW454_231031	1302_MW185_231031	1302_MW191_231031	1302_MW190_231031	1302_MW194_231031
				Sampling date / time	31-Oct-2023 09:58	31-Oct-2023 13:07	31-Oct-2023 13:25	31-Oct-2023 13:40	31-Oct-2023 13:59
Compound	CAS Number	LOR	Unit		ES2337724-016	ES2337724-017	ES2337724-018	ES2337724-019	ES2337724-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.72**	**0.04**	**0.06**	**0.08**	**0.08**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.79**	**0.04**	**0.06**	**0.09**	**0.09**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**12.2**	**0.24**	**0.64**	**0.71**	**0.73**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.92**	<0.02	**0.04**	**0.05**	**0.06**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**26.1**	**0.13**	**1.62**	**1.14**	**1.78**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.63**	<0.02	**0.04**	**0.03**	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.94**	**0.03**	**0.13**	**0.15**	**0.16**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.34**	<0.02	<0.02	<0.02	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.66**	**0.01**	**0.04**	**0.04**	**0.04**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW454_231031	1302_MW185_231031	1302_MW191_231031	1302_MW190_231031	1302_MW194_231031
				Sampling date / time	31-Oct-2023 09:58	31-Oct-2023 13:07	31-Oct-2023 13:25	31-Oct-2023 13:40	31-Oct-2023 13:59
Compound	CAS Number	LOR	Unit		ES2337724-016	ES2337724-017	ES2337724-018	ES2337724-019	ES2337724-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<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		**47.7**	**0.49**	**2.63**	**2.29**	**3.00**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**38.3**	**0.37**	**2.26**	**1.85**	**2.51**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**45.0**	**0.45**	**2.53**	**2.15**	**2.85**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**118**	**103**	**104**	**97.0**	**104**
13C8-PFOA	----	0.02	%		**109**	**102**	**102**	**107**	**107**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW195_231031	1302_MW176_231031	1302_MW180_231031	1302_MW200_231031	1302_MW209_231031
				Sampling date / time	31-Oct-2023 13:52	31-Oct-2023 06:33	31-Oct-2023 12:04	31-Oct-2023 06:49	31-Oct-2023 12:38
Compound	CAS Number	LOR	Unit		ES2337724-021	ES2337724-022	ES2337724-023	ES2337724-024	ES2337724-025
					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	**0.07**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.08**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	**0.03**	**0.05**	**0.63**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	**0.07**	**0.02**	**0.89**	<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	**0.08**	<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: WATER (Matrix: WATER)				Sample ID	1302_MW195_231031	1302_MW176_231031	1302_MW180_231031	1302_MW200_231031	1302_MW209_231031
				Sampling date / time	31-Oct-2023 13:52	31-Oct-2023 06:33	31-Oct-2023 12:04	31-Oct-2023 06:49	31-Oct-2023 12:38
Compound	CAS Number	LOR	Unit		ES2337724-021	ES2337724-022	ES2337724-023	ES2337724-024	ES2337724-025
					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		<0.05	<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		**0.11**	**0.10**	**0.07**	**1.82**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.11**	**0.10**	**0.07**	**1.52**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.11**	**0.10**	**0.07**	**1.70**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.1**	**102**	**98.2**	**103**	**102**
13C8-PFOA	----	0.02	%		**110**	**113**	**108**	**109**	**108**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW211_231031	1302_MW210_231031	1302_QC300_231030	1302_QC400_231030	1302_QC500_231030
				Sampling date / time	31-Oct-2023 12:22	31-Oct-2023 14:27	30-Oct-2023 09:14	30-Oct-2023 09:15	30-Oct-2023 09:17
Compound	CAS Number	LOR	Unit		ES2337724-026	ES2337724-027	ES2337724-029	ES2337724-030	ES2337724-031
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.07**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.09**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.09**	**0.80**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.07**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.23**	**2.49**	<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	**0.03**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.11**	<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	**0.05**	<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	1302_MW211_231031	1302_MW210_231031	1302_QC300_231030	1302_QC400_231030	1302_QC500_231030
				Sampling date / time	31-Oct-2023 12:22	31-Oct-2023 14:27	30-Oct-2023 09:14	30-Oct-2023 09:15	30-Oct-2023 09:17
Compound	CAS Number	LOR	Unit		ES2337724-026	ES2337724-027	ES2337724-029	ES2337724-030	ES2337724-031
					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		**0.32**	**3.71**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.32**	**3.29**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.32**	**3.55**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**109**	**104**	**96.4**	**90.3**	**96.9**
13C8-PFOA	----	0.02	%		**108**	**109**	**98.4**	**106**	**105**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC100_231030	1302_QC101_231031	1302_QC301_231031	1302_QC401_231031	1302_QC501_231031
				Sampling date / time	30-Oct-2023 12:10	31-Oct-2023 06:38	31-Oct-2023 08:14	31-Oct-2023 08:14	31-Oct-2023 08:15
Compound	CAS Number	LOR	Unit		ES2337724-032	ES2337724-033	ES2337724-035	ES2337724-036	ES2337724-037
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.16**	<0.02	<0.02	<0.02	<0.02
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		**1.34**	**0.03**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.08**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.52**	**0.07**	<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		**0.04**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.22**	<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		**0.06**	<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	1302_QC100_231030	1302_QC101_231031	1302_QC301_231031	1302_QC401_231031	1302_QC501_231031
				Sampling date / time	30-Oct-2023 12:10	31-Oct-2023 06:38	31-Oct-2023 08:14	31-Oct-2023 08:14	31-Oct-2023 08:15
Compound	CAS Number	LOR	Unit		ES2337724-032	ES2337724-033	ES2337724-035	ES2337724-036	ES2337724-037
					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		**4.61**	**0.10**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**3.86**	**0.10**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**4.36**	**0.10**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.6**	**102**	**94.8**	**94.6**	**99.5**
13C8-PFOA	----	0.02	%		**108**	**109**	**103**	**102**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC102_231031	----	----	----	----
				Sampling date / time	31-Oct-2023 13:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2337724-039	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.03**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.22**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.11**	----	----	----	----
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: WATER (Matrix: WATER)				Sample ID	1302_QC102_231031	----	----	----	----
				Sampling date / time	31-Oct-2023 13:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2337724-039	--------	--------	--------	--------
					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		**0.43**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.33**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.40**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.0**	----	----	----	----
13C8-PFOA	----	0.02	%		**106**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2337724**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: 2[redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 02-Nov-2023
Order number	: 60612561	Date Analysis Commenced	: 03-Nov-2023
C-O-C number	: 59290	Issue Date	: 08-Nov-2023
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_23		
Quote number	: SY/139/19 V3		
No. of samples received	: 36		
No. of samples analysed	: 36		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5403994)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	78.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	81.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	79.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	95.3	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	98.5	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	100	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5403995)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	75.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	77.3	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	76.8	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	83.2	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	85.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	81.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5403994)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	76.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	79.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	82.7	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	90.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	78.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	77.9	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	78.3	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	89.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.1	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	87.7	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5403995)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	83.3	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	80.1	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	81.7	72.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)
						LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5403995) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	84.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	79.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	80.5	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	83.5	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	82.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5403994)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	95.4	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	91.8	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	84.4	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	86.7	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	85.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	82.7	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5403995)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	79.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	83.7	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	84.7	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	80.2	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	86.7	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	82.7	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	81.3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5403994)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	80.0	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	87.8	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	86.6	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	76.1	71.4	144

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: 5403995)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	78.8	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	82.8	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	86.7	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	81.2	71.4	144

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	: **ES2337724**	Page	: 1 of 8
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 02-Nov-2023
Site	: NT_1302_PFASOMP_23	Issue Date	: 08-Nov-2023
Sampler	: [redacted]	No. of samples received	: 36
Order number	: 60612561	No. of samples analysed	: 36

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
	0				
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	36	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	36	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)								
1302_MW297_231031,	1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X)								
1302_MW215_231030,	1302_MW139_231030,	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
1302_MW103_231030,	1302_MW107_231030,							
1302_MW141_231030,	1302_MW144_231030,							
1302_MW148_231030,	1302_MW451_231030,							
1302_MW452_231030,	1302_QC300_231030,							
1302_QC400_231030,	1302_QC500_231030,							
1302_QC100_231030								
HDPE (no PTFE) (EP231X)								
1302_MW133_231031,	1302_MW115_231031,	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
1302_MW454_231031								
HDPE (no PTFE) (EP231X)								
1302_MW205_231031,	1302_MW156_231031,	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓
1302_MW185_231031,	1302_MW191_231031,							
1302_MW190_231031,	1302_MW194_231031,							
1302_MW195_231031,	1302_MW176_231031,							
1302_MW180_231031,	1302_MW200_231031,							
1302_MW209_231031,	1302_MW211_231031,							
1302_MW210_231031,	1302_QC101_231031,							
1302_QC301_231031,	1302_QC401_231031,							
1302_QC501_231031,	1302_QC102_231031							

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) 1302_MW297_231031, 1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW215_231030, 1302_MW139_231030, 1302_MW103_231030, 1302_MW107_231030, 1302_MW141_231030, 1302_MW144_231030, 1302_MW148_231030, 1302_MW451_231030, 1302_MW452_231030, 1302_QC300_231030, 1302_QC400_231030, 1302_QC500_231030, 1302_QC100_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW133_231031, 1302_MW115_231031, 1302_MW454_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW205_231031, 1302_MW156_231031, 1302_MW185_231031, 1302_MW191_231031, 1302_MW190_231031, 1302_MW194_231031, 1302_MW195_231031, 1302_MW176_231031, 1302_MW180_231031, 1302_MW200_231031, 1302_MW209_231031, 1302_MW211_231031, 1302_MW210_231031, 1302_QC101_231031, 1302_QC301_231031, 1302_QC401_231031, 1302_QC501_231031, 1302_QC102_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓

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) 1302_MW297_231031, 1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW215_231030, 1302_MW139_231030, 1302_MW103_231030, 1302_MW107_231030, 1302_MW141_231030, 1302_MW144_231030, 1302_MW148_231030, 1302_MW451_231030, 1302_MW452_231030, 1302_QC300_231030, 1302_QC400_231030, 1302_QC500_231030, 1302_QC100_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW133_231031, 1302_MW115_231031, 1302_MW454_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW205_231031, 1302_MW156_231031, 1302_MW185_231031, 1302_MW191_231031, 1302_MW190_231031, 1302_MW194_231031, 1302_MW195_231031, 1302_MW176_231031, 1302_MW180_231031, 1302_MW200_231031, 1302_MW209_231031, 1302_MW211_231031, 1302_MW210_231031, 1302_QC101_231031, 1302_QC301_231031, 1302_QC401_231031, 1302_QC501_231031, 1302_QC102_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓

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) 1302_MW297_231031, 1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW215_231030, 1302_MW139_231030, 1302_MW103_231030, 1302_MW107_231030, 1302_MW141_231030, 1302_MW144_231030, 1302_MW148_231030, 1302_MW451_231030, 1302_MW452_231030, 1302_QC300_231030, 1302_QC400_231030, 1302_QC500_231030, 1302_QC100_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW133_231031, 1302_MW115_231031, 1302_MW454_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW205_231031, 1302_MW156_231031, 1302_MW185_231031, 1302_MW191_231031, 1302_MW190_231031, 1302_MW194_231031, 1302_MW195_231031, 1302_MW176_231031, 1302_MW180_231031, 1302_MW200_231031, 1302_MW209_231031, 1302_MW211_231031, 1302_MW210_231031, 1302_QC101_231031, 1302_QC301_231031, 1302_QC401_231031, 1302_QC501_231031, 1302_QC102_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓

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) 1302_MW297_231031, 1302_MW303_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**07-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW215_231030, 1302_MW139_231030, 1302_MW103_231030, 1302_MW107_231030, 1302_MW141_231030, 1302_MW144_231030, 1302_MW148_231030, 1302_MW451_231030, 1302_MW452_231030, 1302_QC300_231030, 1302_QC400_231030, 1302_QC500_231030, 1302_QC100_231030	**30-Oct-2023**	**06-Nov-2023**	27-Apr-2024	✓	**08-Nov-2023**	27-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW133_231031, 1302_MW115_231031, 1302_MW454_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**07-Nov-2023**	28-Apr-2024	✓
HDPE (no PTFE) (EP231X) 1302_MW205_231031, 1302_MW156_231031, 1302_MW185_231031, 1302_MW191_231031, 1302_MW190_231031, 1302_MW194_231031, 1302_MW195_231031, 1302_MW176_231031, 1302_MW180_231031, 1302_MW200_231031, 1302_MW209_231031, 1302_MW211_231031, 1302_MW210_231031, 1302_QC101_231031, 1302_QC301_231031, 1302_QC401_231031, 1302_QC501_231031, 1302_QC102_231031	**31-Oct-2023**	**06-Nov-2023**	28-Apr-2024	✓	**08-Nov-2023**	28-Apr-2024	✓

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	36	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	36	**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	: **ES2338712**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_23	Page	: 1 of 2
Order number	: 60612561	Quote number	: EP2023AECOMAU0010 (EN/004/23)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 10-Nov-2023 08:30	Issue Date	: 10-Nov-2023
Client Requested Due Date	: 16-Nov-2023	Scheduled Reporting Date	: **16-Nov-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 31.2'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 5 / 5

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 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 direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2338712-001	09-Nov-2023 00:00	1302_MW128_231109	✓
ES2338712-002	09-Nov-2023 00:00	1302_QC100_231109	✓
ES2338712-003	09-Nov-2023 00:00	1302_QC300_231109	✓
ES2338712-004	09-Nov-2023 00:00	1302_QC400_231109	✓
ES2338712-005	09-Nov-2023 00:00	1302_QC500_231109	✓

Proactive Holding Time Report

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

Requested Deliverables

A[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2338712**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 10-Nov-2023 08:30
Order number	: 60612561	Date Analysis Commenced	: 10-Nov-2023
C-O-C number	: ----	Issue Date	: 14-Nov-2023 14:48
Sampler	[redacted]		
Site	: ----		
Quote number	: EN/004/23		
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]	[redacted]	Sydney Organics, Smithfield, NSW

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	1302_MW128_231109	1302_QC100_231109	1302_QC300_231109	1302_QC400_231109	1302_QC500_231109
				Sampling date / time	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00
Compound	CAS Number	LOR	Unit		ES2338712-001	ES2338712-002	ES2338712-003	ES2338712-004	ES2338712-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.11**	**0.12**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	**0.12**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.30**	**1.35**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.08**	**0.08**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.26**	**3.36**	<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		**0.24**	**0.24**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.41**	**0.43**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.06**	**0.06**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.10**	**0.11**	<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	1302_MW128_231109	1302_QC100_231109	1302_QC300_231109	1302_QC400_231109	1302_QC500_231109
				Sampling date / time	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00	09-Nov-2023 00:00
Compound	CAS Number	LOR	Unit		ES2338712-001	ES2338712-002	ES2338712-003	ES2338712-004	ES2338712-005
					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		**0.80**	**0.77**	<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		**6.48**	**6.64**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.56**	**4.71**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**6.28**	**6.44**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**92.2**	**90.0**	**95.4**	**99.4**	**97.3**
13C8-PFOA	----	0.02	%		**100**	**98.7**	**97.8**	**98.8**	**98.8**

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2338712**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 10-Nov-2023
Site	: ----	Issue Date	: 14-Nov-2023
Sampler	: [redacted]	No. of samples received	: 5
Order number	: 60612561	No. of samples analysed	: 5

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: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	ES2338712--001	1302_MW128_231109	**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	ES2338712--001	1302_MW128_231109	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	1				
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	20	5.00	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)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓

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)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
1302_MW128_231109, 1302_QC100_231109, 1302_QC300_231109, 1302_QC400_231109, 1302_QC500_231109	**09-Nov-2023**	**13-Nov-2023**	07-May-2024	✓	**14-Nov-2023**	07-May-2024	✓

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	20	**5.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**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.

QUALITY CONTROL REPORT

Work Order	: **ES2338712**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: Loren Schiavon
Address	: [redacted]	Address	[redacted]
Telephone	: ----	Telephone	: +[redacted]
Project	: NT_1302_PFASOMP_23	Date Samples Received	: 10-Nov-2023
Order number	: 60612561	Date Analysis Commenced	: 10-Nov-2023
C-O-C number	: ----	Issue Date	: 14-Nov-2023
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/23		
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 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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5417257)									
ES2338712-001	1302_MW128_231109	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	1.30	1.27	2.4	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	3.26	3.49	7.0	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.11	0.12	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.12	0.13	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.08	0.07	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: 5417257)									
ES2338712-001	1302_MW128_231109	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.10	0.10	0.0	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.24	0.24	0.0	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.41	0.41	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.06	0.06	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: 5417257)									
ES2338712-001	1302_MW128_231109	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: 5417257) - continued									
ES2338712-001	1302_MW128_231109	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: 5417257)									
ES2338712-001	1302_MW128_231109	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	0.80	0.80	0.0	0% - 50%
		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: 5417257)									
ES2338712-001	1302_MW128_231109	EP231X: Sum of PFAS	----	0.01	µg/L	6.48	6.79	4.7	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: 5417257)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	92.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	98.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	101	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	0.25 µg/L	95.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	87.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5417257)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	104	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	112	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	104	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	113	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	105	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	118	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5417257)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	116	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	117	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	105	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	106	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	102	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: 5417257)								

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: 5417257) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	102	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	106	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	113	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	89.5	71.4	144

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: 5417257)							
ES2338712-001	1302_MW128_231109	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	91.9	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	96.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	112	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	97.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5417257)							
ES2338712-001	1302_MW128_231109	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	100	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	107	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	110	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	102	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	96.8	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	106	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	108	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.7	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	92.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	118	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5417257)							
ES2338712-001	1302_MW128_231109	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	111	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	117	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	102	62.6	147

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: 5417257) - continued							
ES2338712-001	1302_MW128_231109	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	104	66.0	145
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	103	57.6	145
		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	99.1	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5417257)							
ES2338712-001	1302_MW128_231109	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	85.7	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	107	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	111	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	86.4	71.4	144

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES2407635**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: NT_1302_PFASOMP_24	Page	: 1 of 3
Order number	: 60612561/4.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: 64466	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NT_1302_PFASOMP_24		
Sampler	: [redacted]		

Dates

Date Samples Received	: 08-Mar-2024 13:30	Issue Date	: 12-Mar-2024
Client Requested Due Date	: 14-Mar-2024	Scheduled Reporting Date	: **14-Mar-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 6	Temperature	: 16.9'C DRW 16.3"C 16.4'C 16.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 34 / 34

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
- This is an updated SRN which indicates the the updated sample date for this work order.
- **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.**
- **QC Forward analysis will be conducted by NMI.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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)
ES2407635-001	05-Mar-2024 15:57	1302_MW215_240305	✓
ES2407635-002	04-Mar-2024 15:13	1302_MW297_240304	✓
ES2407635-003	05-Mar-2024 15:26	1302_MW303_240305	✓
ES2407635-004	05-Mar-2024 15:05	1302_MW422_240305	✓
ES2407635-005	04-Mar-2024 16:19	1302_MW240_240304	✓
ES2407635-006	05-Mar-2024 16:10	1302_MW241_240305	✓
ES2407635-007	05-Mar-2024 15:44	1302_MW103_240305	✓
ES2407635-008	05-Mar-2024 15:52	1302_MW107_240305	✓
ES2407635-009	04-Mar-2024 14:46	1302_MW128_240304	✓
ES2407635-010	04-Mar-2024 12:04	1302_MW133_240304	✓
ES2407635-011	05-Mar-2024 15:00	1302_MW139_240305	✓
ES2407635-012	05-Mar-2024 14:52	1302_MW141_240305	✓
ES2407635-013	05-Mar-2024 14:37	1302_MW144_240305	✓
ES2407635-014	05-Mar-2024 13:15	1302_MW148_240305	✓
ES2407635-015	05-Mar-2024 13:26	1302_MW451_240305	✓
ES2407635-016	05-Mar-2024 13:05	1302_MW452_240305	✓
ES2407635-017	05-Mar-2024 15:12	1302_MW454_240305	✓
ES2407635-018	05-Mar-2024 13:47	1302_MW176_240305	✓
ES2407635-019	05-Mar-2024 14:15	1302_MW180_240305	✓
ES2407635-020	05-Mar-2024 11:59	1302_MW185_240305	✓
ES2407635-021	05-Mar-2024 12:09	1302_MW191_240305	✓
ES2407635-022	05-Mar-2024 12:17	1302_MW190_240305	✓
ES2407635-023	05-Mar-2024 12:35	1302_MW194_240305	✓
ES2407635-024	05-Mar-2024 12:25	1302_MW195_240305	✓
ES2407635-025	05-Mar-2024 13:57	1302_MW200_240305	✓
ES2407635-026	05-Mar-2024 13:35	1302_MW209_240305	✓
ES2407635-027	05-Mar-2024 12:55	1302_MW210_240305	✓
ES2407635-028	05-Mar-2024 14:05	1302_MW211_240305	✓
ES2407635-029	05-Mar-2024 12:29	1302_QC100_240305	✓
ES2407635-031	05-Mar-2024 14:43	1302_QC101_240305	✓
ES2407635-033	05-Mar-2024 15:31	1302_QC102_240305	✓
ES2407635-035	05-Mar-2024 11:38	1302_QC300_240305	✓
ES2407635-036	05-Mar-2024 11:42	1302_QC400_240305	✓
ES2407635-037	05-Mar-2024 11:42	1302_QC500_240305	✓

Proactive Holding Time Report

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

Requested Deliverables

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ES2407635**	Page	: 1 of 17
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: Loren Schiavon
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 08-Mar-2024 13:30
Order number	: 60612561/4.1	Date Analysis Commenced	: 11-Mar-2024
C-O-C number	: 64466	Issue Date	: 12-Mar-2024 16:13
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 34		
No. of samples analysed	: 34		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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)

Compound	CAS Number	LOR	Unit	Sample ID	1302_MW215_240305	1302_MW297_240304	1302_MW303_240305	1302_MW422_240305	1302_MW240_240304
				Sampling date / time	05-Mar-2024 15:57	04-Mar-2024 15:13	05-Mar-2024 15:26	05-Mar-2024 15:05	04-Mar-2024 16:19
					ES2407635-001	ES2407635-002	ES2407635-003	ES2407635-004	ES2407635-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.14**	**0.02**	**2.11**	**0.43**	**0.75**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.14**	**0.03**	**2.77**	**0.43**	**0.72**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.42**	**0.36**	**19.2**	**2.68**	**5.24**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.11**	<0.02	**1.47**	**0.21**	**0.46**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.96**	**1.06**	**19.0**	**4.28**	**14.4**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.05**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.2**	<0.1	**0.6**	**0.1**	**1.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.84**	<0.02	**0.98**	**0.18**	**1.84**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.69**	**0.07**	**5.66**	**0.73**	**3.50**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.13**	<0.02	**0.58**	**0.09**	**2.22**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.08**	**0.02**	**1.23**	**0.16**	**2.44**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.68**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.15**
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	**0.05**
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	1302_MW215_240305	1302_MW297_240304	1302_MW303_240305	1302_MW422_240305	1302_MW240_240304
				Sampling date / time	05-Mar-2024 15:57	04-Mar-2024 15:13	05-Mar-2024 15:26	05-Mar-2024 15:05	04-Mar-2024 16:19
Compound	CAS Number	LOR	Unit		ES2407635-001	ES2407635-002	ES2407635-003	ES2407635-004	ES2407635-005
					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		**1.95**	<0.05	<0.05	<0.05	**0.21**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**1.80**
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		**8.66**	**1.56**	**53.6**	**9.29**	**35.7**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.38**	**1.42**	**38.2**	**6.96**	**19.6**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**8.41**	**1.53**	**49.4**	**8.65**	**33.6**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	**100**	**116**	**109**	**98.3**
13C8-PFOA	----	0.02	%		**98.3**	**103**	**105**	**103**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW241_240305	1302_MW103_240305	1302_MW107_240305	1302_MW128_240304	1302_MW133_240304
				Sampling date / time	05-Mar-2024 16:10	05-Mar-2024 15:44	05-Mar-2024 15:52	04-Mar-2024 14:46	04-Mar-2024 12:04
Compound	CAS Number	LOR	Unit		ES2407635-006	ES2407635-007	ES2407635-008	ES2407635-009	ES2407635-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.72**	**0.16**	**0.13**	**0.14**	**0.44**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.60**	**0.25**	**0.17**	**0.16**	**0.68**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**4.36**	**2.78**	**1.73**	**1.56**	**6.10**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.41**	**0.17**	**0.13**	**0.11**	**1.19**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**15.2**	**6.48**	**4.51**	**3.17**	**37.4**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.08**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.9**	**0.2**	**0.2**	<0.1	**0.1**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.51**	**0.88**	**0.70**	**0.18**	**0.38**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.78**	**1.07**	**0.74**	**0.40**	**2.19**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**2.00**	**0.20**	**0.14**	**0.06**	**0.22**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.23**	**0.20**	**0.13**	**0.11**	**0.66**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.59**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		**0.07**	<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	**0.07**
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	1302_MW241_240305	1302_MW103_240305	1302_MW107_240305	1302_MW128_240304	1302_MW133_240304
				Sampling date / time	05-Mar-2024 16:10	05-Mar-2024 15:44	05-Mar-2024 15:52	04-Mar-2024 14:46	04-Mar-2024 12:04
Compound	CAS Number	LOR	Unit		ES2407635-006	ES2407635-007	ES2407635-008	ES2407635-009	ES2407635-010
					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		**0.21**	**2.13**	**1.40**	**0.35**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		**0.99**	<0.05	<0.05	<0.05	**0.06**
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		**32.6**	**14.5**	**9.98**	**6.24**	**49.6**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**19.6**	**9.26**	**6.24**	**4.73**	**43.5**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**30.9**	**14.1**	**9.68**	**5.97**	**47.6**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**99.2**	**96.3**	**112**	**103**
13C8-PFOA	----	0.02	%		**105**	**100**	**102**	**104**	**107**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW139_240305	1302_MW141_240305	1302_MW144_240305	1302_MW148_240305	1302_MW451_240305
				Sampling date / time	05-Mar-2024 15:00	05-Mar-2024 14:52	05-Mar-2024 14:37	05-Mar-2024 13:15	05-Mar-2024 13:26
Compound	CAS Number	LOR	Unit		ES2407635-011	ES2407635-012	ES2407635-013	ES2407635-014	ES2407635-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.10**	**0.13**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.10**	**0.17**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.09**	**0.15**	**0.80**	**1.65**	**0.03**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.05**	**0.13**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.21**	**0.15**	**1.14**	**3.38**	**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		<0.02	<0.02	**0.02**	**0.04**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.11**	**0.22**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.04**	**0.09**	<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: WATER (Matrix: WATER)				Sample ID	1302_MW139_240305	1302_MW141_240305	1302_MW144_240305	1302_MW148_240305	1302_MW451_240305
				Sampling date / time	05-Mar-2024 15:00	05-Mar-2024 14:52	05-Mar-2024 14:37	05-Mar-2024 13:15	05-Mar-2024 13:26
Compound	CAS Number	LOR	Unit		ES2407635-011	ES2407635-012	ES2407635-013	ES2407635-014	ES2407635-015
					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		**0.30**	**0.30**	**2.36**	**5.85**	**0.13**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.30**	**0.30**	**1.94**	**5.03**	**0.13**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.30**	**0.30**	**2.21**	**5.55**	**0.13**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**109**	**93.2**	**106**	**104**	**111**
13C8-PFOA	----	0.02	%		**101**	**105**	**105**	**104**	**97.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW452_240305	1302_MW454_240305	1302_MW176_240305	1302_MW180_240305	1302_MW185_240305
				Sampling date / time	05-Mar-2024 13:05	05-Mar-2024 15:12	05-Mar-2024 13:47	05-Mar-2024 14:15	05-Mar-2024 11:59
Compound	CAS Number	LOR	Unit		ES2407635-016	ES2407635-017	ES2407635-018	ES2407635-019	ES2407635-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.08**	**1.24**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.14**	**1.63**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.20**	**10.9**	**0.04**	**0.07**	**0.07**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.08**	**0.69**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.74**	**16.5**	**0.07**	**0.01**	**0.03**
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	**0.2**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.18**	**0.46**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.28**	**2.10**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	**0.23**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	**0.50**	<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: WATER (Matrix: WATER)				Sample ID	1302_MW452_240305	1302_MW454_240305	1302_MW176_240305	1302_MW180_240305	1302_MW185_240305
				Sampling date / time	05-Mar-2024 13:05	05-Mar-2024 15:12	05-Mar-2024 13:47	05-Mar-2024 14:15	05-Mar-2024 11:59
Compound	CAS Number	LOR	Unit		ES2407635-016	ES2407635-017	ES2407635-018	ES2407635-019	ES2407635-020
					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		**0.10**	<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		**3.91**	**34.4**	**0.11**	**0.28**	**0.10**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.94**	**27.4**	**0.11**	**0.08**	**0.10**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**3.69**	**32.1**	**0.11**	**0.28**	**0.10**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**111**	**90.8**	**102**	**102**	**99.1**
13C8-PFOA	----	0.02	%		**102**	**98.8**	**103**	**96.6**	**102**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	1302_MW191_240305	1302_MW190_240305	1302_MW194_240305	1302_MW195_240305	1302_MW200_240305
				Sampling date / time	05-Mar-2024 12:09	05-Mar-2024 12:17	05-Mar-2024 12:35	05-Mar-2024 12:25	05-Mar-2024 13:57
					ES2407635-021	ES2407635-022	ES2407635-023	ES2407635-024	ES2407635-025
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	<0.02	**0.07**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.04**	<0.02	**0.08**	<0.02	**0.02**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.48**	**0.09**	**0.73**	**0.19**	**0.20**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.05**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.98**	**0.21**	**1.95**	**0.41**	**0.30**
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		**1.11**	<0.02	**0.03**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.08**	<0.02	**0.15**	**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		**0.03**	<0.01	**0.05**	<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: WATER (Matrix: WATER)				Sample ID	1302_MW191_240305	1302_MW190_240305	1302_MW194_240305	1302_MW195_240305	1302_MW200_240305
				Sampling date / time	05-Mar-2024 12:09	05-Mar-2024 12:17	05-Mar-2024 12:35	05-Mar-2024 12:25	05-Mar-2024 13:57
Compound	CAS Number	LOR	Unit		ES2407635-021	ES2407635-022	ES2407635-023	ES2407635-024	ES2407635-025
					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		**2.75**	**0.30**	**3.11**	**0.63**	**0.54**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.46**	**0.30**	**2.68**	**0.60**	**0.50**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.71**	**0.30**	**2.98**	**0.63**	**0.52**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	**104**	**99.8**	**103**	**98.6**
13C8-PFOA	----	0.02	%		**103**	**96.5**	**100**	**99.3**	**96.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_MW209_240305	1302_MW210_240305	1302_MW211_240305	1302_QC100_240305	1302_QC101_240305
				Sampling date / time	05-Mar-2024 13:35	05-Mar-2024 12:55	05-Mar-2024 14:05	05-Mar-2024 12:29	05-Mar-2024 14:43
Compound	CAS Number	LOR	Unit		ES2407635-026	ES2407635-027	ES2407635-028	ES2407635-029	ES2407635-031
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.06**	<0.02	<0.02	**0.10**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.06**	<0.02	**0.02**	**0.10**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.56**	**0.03**	**0.18**	**0.73**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.04**	<0.02	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**1.43**	**0.05**	**0.38**	**1.02**
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	**0.08**	<0.02	**0.03**	**0.10**
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	**0.03**
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: WATER (Matrix: WATER)				Sample ID	1302_MW209_240305	1302_MW210_240305	1302_MW211_240305	1302_QC100_240305	1302_QC101_240305
				Sampling date / time	05-Mar-2024 13:35	05-Mar-2024 12:55	05-Mar-2024 14:05	05-Mar-2024 12:29	05-Mar-2024 14:43
Compound	CAS Number	LOR	Unit		ES2407635-026	ES2407635-027	ES2407635-028	ES2407635-029	ES2407635-031
					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		<0.01	**2.28**	**0.08**	**0.61**	**2.14**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**1.99**	**0.08**	**0.56**	**1.75**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**2.18**	**0.08**	**0.59**	**2.00**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**107**	**94.0**	**110**	**110**	**93.9**
13C8-PFOA	----	0.02	%		**98.1**	**104**	**99.0**	**95.9**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1302_QC102_240305	1302_QC300_240305	1302_QC400_240305	1302_QC500_240305	----
				Sampling date / time	05-Mar-2024 15:31	05-Mar-2024 11:38	05-Mar-2024 11:42	05-Mar-2024 11:42	----
Compound	CAS Number	LOR	Unit		ES2407635-033	ES2407635-035	ES2407635-036	ES2407635-037	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.98**	<0.02	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.84**	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**19.5**	<0.01	<0.01	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.30**	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**18.9**	<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		**0.5**	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.90**	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**4.70**	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.58**	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.20**	<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	1302_QC102_240305	1302_QC300_240305	1302_QC400_240305	1302_QC500_240305	----
				Sampling date / time	05-Mar-2024 15:31	05-Mar-2024 11:38	05-Mar-2024 11:42	05-Mar-2024 11:42	----
Compound	CAS Number	LOR	Unit		ES2407635-033	ES2407635-035	ES2407635-036	ES2407635-037	--------
					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		**0.06**	<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		**52.5**	<0.01	<0.01	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**38.4**	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**48.3**	<0.01	<0.01	<0.01	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.0**	**99.9**	**92.1**	**102**	----
13C8-PFOA	----	0.02	%		**101**	**96.5**	**99.8**	**96.4**	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2407635**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 08-Mar-2024
Order number	: 60612561/4.1	Date Analysis Commenced	: 11-Mar-2024
C-O-C number	: 64466	Issue Date	: 12-Mar-2024
Sampler	: [redacted]		
Site	: NT_1302_PFASOMP_24		
Quote number	: SY/139/19 V3		
No. of samples received	: 34		
No. of samples analysed	: 34		

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]	[redacted]	Sydney Organics, Smithfield, NSW

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: 5653089)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	78.0	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	80.8	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	84.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	92.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	83.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	75.6	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5653090)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	76.0	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	92.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	95.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	83.5	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	75.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5653089)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	81.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	87.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	88.7	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	88.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.3	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	93.2	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5653090)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	83.9	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	130

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: 5653090) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	89.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	88.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.3	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	88.1	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	91.9	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.1	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5653089)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.1	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	102	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	85.7	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	95.4	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	105	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.9	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5653090)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.9	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	94.9	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.2	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	85.9	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	89.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	82.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5653089)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	107	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	74.9	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	111	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	75.4	71.4	144

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: 5653090)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	97.9	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	125	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	94.4	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	88.6	71.4	144

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	: **ES2407635**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	[redacted]	Telephone	: [redacted]
Project	: NT_1302_PFASOMP_24	Date Samples Received	: 08-Mar-2024
Site	: NT_1302_PFASOMP_24	Issue Date	: 12-Mar-2024
Sampler	: [redacted]	No. of samples received	: 34
Order number	: 60612561/4.1	No. of samples analysed	: 34

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		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	34	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	34	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)								
1302_MW297_240304,	1302_MW240_240304,	**04-Mar-2024**	**11-Mar-2024**	31-Aug-2024	✓	**12-Mar-2024**	31-Aug-2024	✓
1302_MW128_240304,	1302_MW133_240304							
HDPE (no PTFE) (EP231X)								
1302_MW215_240305,	1302_MW303_240305,	**05-Mar-2024**	**11-Mar-2024**	01-Sep-2024	✓	**12-Mar-2024**	01-Sep-2024	✓
1302_MW422_240305,	1302_MW241_240305,							
1302_MW103_240305,	1302_MW107_240305,							
1302_MW139_240305,	1302_MW141_240305,							
1302_MW144_240305,	1302_MW148_240305,							
1302_MW451_240305,	1302_MW452_240305,							
1302_MW454_240305,	1302_MW176_240305,							
1302_MW180_240305,	1302_MW185_240305,							
1302_MW191_240305,	1302_MW190_240305,							
1302_MW194_240305,	1302_MW195_240305,							
1302_MW200_240305,	1302_MW209_240305,							
1302_MW210_240305,	1302_MW211_240305,							
1302_QC100_240305,	1302_QC101_240305,							
1302_QC102_240305,	1302_QC300_240305,							
1302_QC400_240305,	1302_QC500_240305							

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)							
1302_MW297_240304, 1302_MW240_240304, 1302_MW128_240304, 1302_MW133_240304	**04-Mar-2024**	**11-Mar-2024**	31-Aug-2024	✓	**12-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
1302_MW215_240305, 1302_MW303_240305, 1302_MW422_240305, 1302_MW241_240305, 1302_MW103_240305, 1302_MW107_240305, 1302_MW139_240305, 1302_MW141_240305, 1302_MW144_240305, 1302_MW148_240305, 1302_MW451_240305, 1302_MW452_240305, 1302_MW454_240305, 1302_MW176_240305, 1302_MW180_240305, 1302_MW185_240305, 1302_MW191_240305, 1302_MW190_240305, 1302_MW194_240305, 1302_MW195_240305, 1302_MW200_240305, 1302_MW209_240305, 1302_MW210_240305, 1302_MW211_240305, 1302_QC100_240305, 1302_QC101_240305, 1302_QC102_240305, 1302_QC300_240305, 1302_QC400_240305, 1302_QC500_240305	**05-Mar-2024**	**11-Mar-2024**	01-Sep-2024	✓	**12-Mar-2024**	01-Sep-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
1302_MW297_240304, 1302_MW240_240304, 1302_MW128_240304, 1302_MW133_240304	**04-Mar-2024**	**11-Mar-2024**	31-Aug-2024	✓	**12-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
1302_MW215_240305, 1302_MW303_240305, 1302_MW422_240305, 1302_MW241_240305, 1302_MW103_240305, 1302_MW107_240305, 1302_MW139_240305, 1302_MW141_240305, 1302_MW144_240305, 1302_MW148_240305, 1302_MW451_240305, 1302_MW452_240305, 1302_MW454_240305, 1302_MW176_240305, 1302_MW180_240305, 1302_MW185_240305, 1302_MW191_240305, 1302_MW190_240305, 1302_MW194_240305, 1302_MW195_240305, 1302_MW200_240305, 1302_MW209_240305, 1302_MW210_240305, 1302_MW211_240305, 1302_QC100_240305, 1302_QC101_240305, 1302_QC102_240305, 1302_QC300_240305, 1302_QC400_240305, 1302_QC500_240305	**05-Mar-2024**	**11-Mar-2024**	01-Sep-2024	✓	**12-Mar-2024**	01-Sep-2024	✓

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)							
1302_MW297_240304, 1302_MW240_240304, 1302_MW128_240304, 1302_MW133_240304	**04-Mar-2024**	**11-Mar-2024**	31-Aug-2024	✓	**12-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
1302_MW215_240305, 1302_MW303_240305, 1302_MW422_240305, 1302_MW241_240305, 1302_MW103_240305, 1302_MW107_240305, 1302_MW139_240305, 1302_MW141_240305, 1302_MW144_240305, 1302_MW148_240305, 1302_MW451_240305, 1302_MW452_240305, 1302_MW454_240305, 1302_MW176_240305, 1302_MW180_240305, 1302_MW185_240305, 1302_MW191_240305, 1302_MW190_240305, 1302_MW194_240305, 1302_MW195_240305, 1302_MW200_240305, 1302_MW209_240305, 1302_MW210_240305, 1302_MW211_240305, 1302_QC100_240305, 1302_QC101_240305, 1302_QC102_240305, 1302_QC300_240305, 1302_QC400_240305, 1302_QC500_240305	**05-Mar-2024**	**11-Mar-2024**	01-Sep-2024	✓	**12-Mar-2024**	01-Sep-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
1302_MW297_240304, 1302_MW240_240304, 1302_MW128_240304, 1302_MW133_240304	**04-Mar-2024**	**11-Mar-2024**	31-Aug-2024	✓	**12-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
1302_MW215_240305, 1302_MW303_240305, 1302_MW422_240305, 1302_MW241_240305, 1302_MW103_240305, 1302_MW107_240305, 1302_MW139_240305, 1302_MW141_240305, 1302_MW144_240305, 1302_MW148_240305, 1302_MW451_240305, 1302_MW452_240305, 1302_MW454_240305, 1302_MW176_240305, 1302_MW180_240305, 1302_MW185_240305, 1302_MW191_240305, 1302_MW190_240305, 1302_MW194_240305, 1302_MW195_240305, 1302_MW200_240305, 1302_MW209_240305, 1302_MW210_240305, 1302_MW211_240305, 1302_QC100_240305, 1302_QC101_240305, 1302_QC102_240305, 1302_QC300_240305, 1302_QC400_240305, 1302_QC500_240305	**05-Mar-2024**	**11-Mar-2024**	01-Sep-2024	✓	**12-Mar-2024**	01-Sep-2024	✓

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	34	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	34	**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.

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

SAMPLE DETAILS

NMI Job Name: **AECO06/231107**

Total No. of Samples: **4**

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N23/023327	5-DEC-2023	1302_QC201_231017	BIOTA 17 OCT 2023
N23/023328	5-DEC-2023	1302_QC202_231017	BIOTA 17 OCT 2023

N23/023329	5-DEC-2023	1302_QC203_231017	BIOTA 18 OCT 2023
N23/023330	5-DEC-2023	1302_QC204_231017	BIOTA 18 OCT 2023

SAMPLE RECEIVED CONDITION

Date samples received: 7-NOV-2023

Sample received in good order: Yes

NMI Quotation no. provided: 60612561/3.1

Client purchase order number: 60612561/3_1

Temperature of samples: Frozen

Comments:

Mode of Delivery:

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government

National Measurement Institute

Lab Blank	11383
Blank concentration	mg/kg
PFBA (375-22-4)	<0.001
PFPeA (2706-90-3)	<0.0005
PFHxA (307-24-4)	<0.0005
PFHpA (375-85-9)	<0.0005
PFOA (335-67-1)	<0.0001
PFNA (375-95-1)	<0.0001
PFDA (335-76-2)	<0.0005
PFUnDA (2058-94-8)	<0.0005
PFDoDA (307-55-1)	<0.0005
PFTrDA (72629-94-8)	<0.0005
PFTeDA (376-06-7)	<0.0005
PFBS (375-73-5)	<0.0005
PFPeS (2706-91-4)	<0.0005
PFHxS (355-46-4)	<0.0003
PFHpS (375-92-8)	<0.0005
PFOS (1763-23-1)	<0.0003
PFNS (68259-12-1)	<0.0003
PFDS (335-77-3)	<0.0003
PFDoS (79780-39-5)	<0.0005
PFOSA (754-91-6)	<0.0005
N-MeFOSAA (2355-31-9)	<0.0005
N-EtFOSAA(2991-50-6)	<0.0005
4:2 FTS (757124-72-4)	<0.0005
6:2 FTS (27619-97-2)	<0.0005
8:2 FTS (39108-34-4)	<0.0005
10:2 FTS (120226-60-0)	<0.0005
HFPO-DA (13252-13-6)	<0.0005
9Cl-PF3ONS (756426-58-1)	<0.0005
11Cl-PF3OUdS (83329-89-9)	<0.0005
ADONA (919005-14-4)	<0.005
Extracted Date	15/01/2024
LCMSMS Analysis Date	18/01/2024

Lab Control Spike	11383
Native Spike recovery	%
PFBA (375-22-4)	109%
PFPeA (2706-90-3)	102%
PFHxA (307-24-4)	98%
PFHpA (375-85-9)	115%
PFOA (335-67-1)	104%
PFNA (375-95-1)	114%
PFDA (335-76-2)	108%
PFUnDA (2058-94-8)	112%
PFDoDA (307-55-1)	98%
PFTrDA (72629-94-8)	113%
PFTeDA (376-06-7)	97%
PFBS (375-73-5)	96%
PFPeS (2706-91-4)	90%
PFHxS (355-46-4)	94%
PFHpS (375-92-8)	96%
PFOS (1763-23-1)	117%
PFNS (68259-12-1)	99%
PFDS (335-77-3)	98%
PFDoS (79780-39-5)	97%
PFOSA (754-91-6)	125%
N-MeFOSAA (2355-31-9)	103%
N-EtFOSAA(2991-50-6)	106%
4:2 FTS (757124-72-4)	109%
6:2 FTS (27619-97-2)	116%
8:2 FTS (39108-34-4)	118%
10:2 FTS (120226-60-0)	80%
HFPO-DA (13252-13-6)	108%
9Cl-PF3ONS (756426-58-1)	109%
11Cl-PF3OUdS (83329-89-9)	105%
ADONA (919005-14-4)	100%
Extracted Date	15/01/2024
LCMSMS Analysis Date	18/01/2024

Duplicate sample A	11383
N23/023330D	
Relative Percentage Deviation %	
PFBA (375-22-4)	<LOR
PFPeA (2706-90-3)	<LOR
PFHxA (307-24-4)	<LOR
PFHpA (375-85-9)	<LOR
PFOA (335-67-1)	0.5%
PFNA (375-95-1)	0.4%
PFDA (335-76-2)	<LOR
PFUnDA (2058-94-8)	<LOR
PFDoDA (307-55-1)	<LOR
PFTrDA (72629-94-8)	<LOR
PFTeDA (376-06-7)	<LOR
PFBS (375-73-5)	<LOR
PFPeS (2706-91-4)	<LOR
PFHxS (355-46-4)	2%
PFHpS (375-92-8)	<LOR
PFOS (1763-23-1)	1%
PFNS (68259-12-1)	<LOR
PFDS (335-77-3)	<LOR
PFDoS (79780-39-5)	<LOR
PFOSA (754-91-6)	<LOR
N-MeFOSAA (2355-31-9)	<LOR
N-EtFOSAA(2991-50-6)	<LOR
4:2 FTS (757124-72-4)	<LOR
6:2 FTS (27619-97-2)	<LOR
8:2 FTS (39108-34-4)	<LOR
10:2 FTS (120226-60-0)	<LOR
HFPO-DA (13252-13-6)	<LOR
9Cl-PF3ONS (756426-58-1)	<LOR
11Cl-PF3OUdS (83329-89-9)	<LOR
ADONA (919005-14-4)	<LOR
Extracted Date	15/01/2024
LCMSMS Analysis Date	18/01/2024

Spiked sample A	11383
N23/023330S	
Native Spike recovery	%
PFBA (375-22-4)	119%
PFPeA (2706-90-3)	109%
PFHxA (307-24-4)	111%
PFHpA (375-85-9)	123%
PFOA (335-67-1)	117%
PFNA (375-95-1)	124%
PFDA (335-76-2)	116%
PFUnDA (2058-94-8)	122%
PFDoDA (307-55-1)	109%
PFTrDA (72629-94-8)	103%
PFTeDA (376-06-7)	107%
PFBS (375-73-5)	101%
PFPeS (2706-91-4)	95%
PFHxS (355-46-4)	109%
PFHpS (375-92-8)	111%
PFOS (1763-23-1)	109%
PFNS (68259-12-1)	121%
PFDS (335-77-3)	100%
PFDoS (79780-39-5)	94%
PFOSA (754-91-6)	128%
N-MeFOSAA (2355-31-9)	123%
N-EtFOSAA(2991-50-6)	115%
4:2 FTS (757124-72-4)	100%
6:2 FTS (27619-97-2)	119%
8:2 FTS (39108-34-4)	126%
10:2 FTS (120226-60-0)	77%
HFPO-DA (13252-13-6)	115%
9Cl-PF3ONS (756426-58-1)	120%
11Cl-PF3OUdS (83329-89-9)	121%
ADONA (919005-14-4)	109%
Extracted Date	15/01/2024
LCMSMS Analysis Date	18/01/2024

REPORT OF ANALYSIS

Report No. RN1417767

Client	: [redacted]	**Job No.**	: AECO06/231107
		Quote No.	: QT-02232
		Order No.	: 60612561/3_1
		Date Sampled	: 17-OCT-2023
		Date Received	: 07-NOV-2023
Attention	: J[redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/023327	1302_QC201_231017	BIOTA 17 OCT 2023
N23/023328	1302_QC202_231017	BIOTA 17 OCT 2023

Lab Reg No. / Sample Reference	Units	N23/023327 1302_QC201_231017	N23/023328 1302_QC202_231017	Method
PFAS (per-and poly-fluoroalkyl substances)				
PFBA (375-22-4)	mg/kg	<0.001	<0.001	AUTL07
PFPeA (2706-90-3)	mg/kg	<0.0005	<0.0005	AUTL07
PFHxA (307-24-4)	mg/kg	<0.0005	<0.0005	AUTL07
PFHpA (375-85-9)	mg/kg	<0.0005	<0.0005	AUTL07
PFOA (335-67-1)	mg/kg	<0.0001	<0.0001	AUTL07
PFNA (375-95-1)	mg/kg	<0.0001	<0.0001	AUTL07
PFDA (335-76-2)	mg/kg	<0.0005	<0.0005	AUTL07
PFUnDA (2058-94-8)	mg/kg	<0.0005	<0.0005	AUTL07
PFDoDA (307-55-1)	mg/kg	<0.0005	<0.0005	AUTL07
PFTrDA (72629-94-8)	mg/kg	<0.0005	<0.0005	AUTL07
PFTeDA (376-06-7)	mg/kg	<0.0005	<0.0005	AUTL07
PFBS (375-73-5)	mg/kg	<0.0005	<0.0005	AUTL07
PFPeS (2706-91-4)	mg/kg	<0.0005	<0.0005	AUTL07
PFHxS (355-46-4)	mg/kg	<0.0003	<0.0003	AUTL07
PFHpS (375-92-8)	mg/kg	<0.0005	<0.0005	AUTL07
PFOS (1763-23-1)	mg/kg	0.0023	0.00090	AUTL07
PFNS (68259-12-1)	mg/kg	<0.0003	<0.0003	AUTL07
PFDS (335-77-3)	mg/kg	<0.0003	<0.0003	AUTL07
PFOSA (754-91-6)	mg/kg	<0.0005	<0.0005	AUTL07
N-MeFOSA (31506-32-8)	mg/kg	<0.0005	<0.0005	AUTL07
N-EtFOSA (4151-50-2)	mg/kg	<0.0005	<0.0005	AUTL07
N-MeFOSAA (2355-31-9)	mg/kg	<0.0005	<0.0005	AUTL07
N-EtFOSAA(2991-50-6)	mg/kg	<0.0005	<0.0005	AUTL07
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005	AUTL07
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005	AUTL07
4:2 FTS (757124-72-4)	mg/kg	<0.0005	<0.0005	AUTL07
6:2 FTS (27619-97-2)	mg/kg	<0.0005	<0.0005	AUTL07
8:2 FTS (39108-34-4)	mg/kg	<0.0005	<0.0005	AUTL07
10:2 FTS (120226-60-0)	mg/kg	<0.0005	<0.0005	AUTL07

REPORT OF ANALYSIS

Lab Reg No.		N23/023327	N23/023328	
Sample Reference	Units	1302_QC201_231017	1302_QC202_231017	Method
PFAS (per-and poly-fluoroalkyl substances)				
PFBA (Surrogate Recovery)	%	100	97	AUTL07
PFPeA (Surrogate Recovery)	%	94	96	AUTL07
PFHxA (Surrogate Recovery)	%	95	107	AUTL07
PFHpA (Surrogate Recovery)	%	96	97	AUTL07
PFOA (Surrogate Recovery)	%	93	100	AUTL07
PFNA (Surrogate Recovery)	%	98	97	AUTL07
PFDA (Surrogate Recovery)	%	98	102	AUTL07
PFUnDA (Surrogate Recovery)	%	74	84	AUTL07
PFDoDA (Surrogate Recovery)	%	52	59	AUTL07
PFTeDA (Surrogate Recovery)	%	75	73	AUTL07
PFBS (Surrogate Recovery)	%	106	100	AUTL07
PFHxS (Surrogate Recovery)	%	93	96	AUTL07
PFOS (Surrogate Recovery)	%	90	99	AUTL07
PFOSA (Surrogate Recovery)	%	84	90	AUTL07
N-MeFOSA (Surrogate Recovery)	%	11	19	AUTL07
N-EtFOSA (Surrogate Recovery)	%	7	13	AUTL07
N-MeFOSAA (Surrogate Recovery)	%	78	89	AUTL07
N-EtFOSAA (Surrogate Recovery)	%	80	82	AUTL07
N-MeFOSE (Surrogate Recovery)	%	22	24	AUTL07
N-EtFOSE (Surrogate Recovery)	%	22	23	AUTL07
4:2 FTS (Surrogate Recovery)	%	56	66	AUTL07
6:2 FTS (Surrogate Recovery)	%	63	66	AUTL07
8:2 FTS (Surrogate Recovery)	%	66	59	AUTL07
Date Extracted		15-JAN-2024 00:00	15-JAN-2024 00:00	AUTL07
Date Analysed		18-JAN-2024 00:00	18-JAN-2024 00:00	AUTL07

N23/023327
PFAS in biota is not NATA accredited.
Internal standard recoveries are outside the acceptable range of 50-150%
due to matrix intereference for: MeFOSA, EtFOSA, MeFOSE, EtFOSE.

N23/023328
PFAS in biota is not NATA accredited.
Internal standard recoveries are outside the acceptable range of 50-150%
due to matrix intereference for: MeFOSA, EtFOSA, MeFOSE, EtFOSE.

[redacted]

05-FEB-2024

[redacted]

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/231107
	[redacted]	**Quote No.**	: QT-02232
	[redacted]T	**Order No.**	: 60612561/3_1
	[redacted]6	**Date Sampled**	: 18-OCT-2023
		Date Received	: 07-NOV-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/023329	1302_QC203_231018	BIOTA 18 OCT 2023
N23/023330	1302_QC204_231018	BIOTA 18 OCT 2023

Lab Reg No.		N23/023329	N23/023330	
Sample Reference	Units	1302_QC203_231018	1302_QC204_231018	Method
PFAS (per-and poly-fluoroalkyl substances)				
PFBA (375-22-4)	mg/kg	<0.001	<0.001	AUTL07
PFPeA (2706-90-3)	mg/kg	<0.0005	<0.0005	AUTL07
PFHxA (307-24-4)	mg/kg	<0.0005	<0.0005	AUTL07
PFHpA (375-85-9)	mg/kg	<0.0005	<0.0005	AUTL07
PFOA (335-67-1)	mg/kg	<0.0001	0.00015	AUTL07
PFNA (375-95-1)	mg/kg	<0.0001	0.00024	AUTL07
PFDA (335-76-2)	mg/kg	<0.0005	<0.0005	AUTL07
PFUnDA (2058-94-8)	mg/kg	<0.0005	<0.0005	AUTL07
PFDoDA (307-55-1)	mg/kg	<0.0005	<0.0005	AUTL07
PFTrDA (72629-94-8)	mg/kg	<0.0005	<0.0005	AUTL07
PFTeDA (376-06-7)	mg/kg	<0.0005	<0.0005	AUTL07
PFBS (375-73-5)	mg/kg	<0.0005	<0.0005	AUTL07
PFPeS (2706-91-4)	mg/kg	<0.0005	<0.0005	AUTL07
PFHxS (355-46-4)	mg/kg	<0.0003	0.0011	AUTL07
PFHpS (375-92-8)	mg/kg	<0.0005	<0.0005	AUTL07
PFOS (1763-23-1)	mg/kg	0.0041	0.0057	AUTL07
PFNS (68259-12-1)	mg/kg	<0.0003	<0.0003	AUTL07
PFDS (335-77-3)	mg/kg	<0.0003	<0.0003	AUTL07
PFOSA (754-91-6)	mg/kg	<0.0005	<0.0005	AUTL07
N-MeFOSA (31506-32-8)	mg/kg	<0.0005	<0.0005	AUTL07
N-EtFOSA (4151-50-2)	mg/kg	<0.0005	<0.0005	AUTL07
N-MeFOSAA (2355-31-9)	mg/kg	<0.0005	<0.0005	AUTL07
N-EtFOSAA(2991-50-6)	mg/kg	<0.0005	<0.0005	AUTL07
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005	AUTL07
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005	AUTL07
4:2 FTS (757124-72-4)	mg/kg	<0.0005	<0.0005	AUTL07
6:2 FTS (27619-97-2)	mg/kg	<0.0005	<0.0005	AUTL07
8:2 FTS (39108-34-4)	mg/kg	<0.0005	<0.0005	AUTL07
10:2 FTS (120226-60-0)	mg/kg	<0.0005	<0.0005	AUTL07

REPORT OF ANALYSIS

Lab Reg No.		N23/023329	N23/023330	
Sample Reference	Units	1302_QC203_231018	1302_QC204_231018	Method
PFAS (per-and poly-fluoroalkyl substances)				
PFBA (Surrogate Recovery)	%	96	98	AUTL07
PFPeA (Surrogate Recovery)	%	89	96	AUTL07
PFHxA (Surrogate Recovery)	%	96	102	AUTL07
PFHpA (Surrogate Recovery)	%	92	95	AUTL07
PFOA (Surrogate Recovery)	%	94	95	AUTL07
PFNA (Surrogate Recovery)	%	93	93	AUTL07
PFDA (Surrogate Recovery)	%	102	98	AUTL07
PFUnDA (Surrogate Recovery)	%	80	74	AUTL07
PFDoDA (Surrogate Recovery)	%	60	55	AUTL07
PFTeDA (Surrogate Recovery)	%	66	62	AUTL07
PFBS (Surrogate Recovery)	%	101	105	AUTL07
PFHxS (Surrogate Recovery)	%	97	93	AUTL07
PFOS (Surrogate Recovery)	%	92	86	AUTL07
PFOSA (Surrogate Recovery)	%	82	85	AUTL07
N-MeFOSA (Surrogate Recovery)	%	9	21	AUTL07
N-EtFOSA (Surrogate Recovery)	%	5	13	AUTL07
N-MeFOSAA (Surrogate Recovery)	%	83	83	AUTL07
N-EtFOSAA (Surrogate Recovery)	%	81	76	AUTL07
N-MeFOSE (Surrogate Recovery)	%	29	35	AUTL07
N-EtFOSE (Surrogate Recovery)	%	23	31	AUTL07
4:2 FTS (Surrogate Recovery)	%	62	65	AUTL07
6:2 FTS (Surrogate Recovery)	%	65	62	AUTL07
8:2 FTS (Surrogate Recovery)	%	63	50	AUTL07
Date Extracted		15-JAN-2024 00:00	15-JAN-2024 00:00	AUTL07
Date Analysed		18-JAN-2024 00:00	18-JAN-2024 00:00	AUTL07

N23/023329
PFAS in biota is not NATA accredited.
Internal standard recoveries are outside the acceptable range of 50-150%
due to matrix intereference for: MeFOSA, EtFOSA, MeFOSE, EtFOSE.

N23/023330
PFAS in biota is not NATA accredited.
Internal standard recoveries are outside the acceptable range of 50-150%
due to matrix intereference for: MeFOSA, EtFOSA, MeFOSE, EtFOSE.

[redacted]

05-FEB-2024

[redacted]

REPORT OF ANALYSIS

PFHxS and PFOS were quantified using combined branched and linear standards, for all PFAS linear and branched isomers in samples are totalled for reporting.

All results are reported on a wet weight basis as received, and are corrected for labelled internal standard recoveries.

Results relate only to the sample(s) as received and tested.

* Denotes the analyte or test method is not within our ISO/IEC 17025 scope of accreditation.

Measurement Uncertainty is available upon request.
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Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/231219 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	106	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	104	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	108	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	110	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	102	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	104	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	100	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	102	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	113	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	109	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	114	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	108	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	113	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	96	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	93	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	114	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	99	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	90	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	100	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	108	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	95	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	118	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	115	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	88	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1415793

Client	: [redacted]	**Job No.**	: AECO06/231219
	L[redacted]	**Quote No.**	: QT-02232
	[redacted]	**Order No.**	: 60612561_4_1
		Date Received	: 19-DEC-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/027027	1302_QC201_231214	WATER 14/12/2023

Lab Reg No.		N23/027027				
Date Sampled		14-DEC-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05				NR70
PFPeA (2706-90-3)	ug/L	<0.02				NR70
PFHxA (307-24-4)	ug/L	<0.01				NR70
PFHpA (375-85-9)	ug/L	<0.01				NR70
PFOA (335-67-1)	ug/L	<0.01				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	<0.01				NR70
PFHxS (355-46-4)	ug/L	<0.01				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	0.11				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	<0.01				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/027027				
Date Sampled		14-DEC-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	89				NR70
PFPeA (Surrogate Recovery)	%	82				NR70
PFHxA (Surrogate Recovery)	%	85				NR70
PFHpA (Surrogate Recovery)	%	88				NR70
PFOA (Surrogate Recovery)	%	87				NR70
PFNA (Surrogate Recovery)	%	81				NR70
PFDA (Surrogate Recovery)	%	86				NR70
PFUdA (Surrogate Recovery)	%	74				NR70
PFDoA (Surrogate Recovery)	%	67				NR70
PFTeDA (Surrogate Recovery)	%	60				NR70
PFHxDA (Surrogate Recovery)	%	68				NR70
FOUEA (Surrogate Recovery)	%	67				NR70
PFBS (Surrogate Recovery)	%	88				NR70
PFHxS (Surrogate Recovery)	%	87				NR70
PFOS (Surrogate Recovery)	%	85				NR70
PFOSA (Surrogate Recovery)	%	63				NR70
N-MeFOSA (Surrogate Recovery)	%	49				NR70
N-EtFOSA (Surrogate Recovery)	%	48				NR70
N-MeFOSAA (Surrogate Recovery)	%	58				NR70
N-EtFOSAA (Surrogate Recovery)	%	57				NR70
N-MeFOSE (Surrogate Recovery)	%	60				NR70
N-EtFOSE (Surrogate Recovery)	%	47				NR70
4:2 FTS (Surrogate Recovery)	%	83				NR70
6:2 FTS (Surrogate Recovery)	%	78				NR70
8:2 FTS (Surrogate Recovery)	%	111				NR70
8:2 diPAP (Surrogate Recovery)	%	89				NR70
Dates						
Date extracted		22-DEC-2023				
Date analysed		3-JAN-2024				

N23/027027
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.

REPORT OF ANALYSIS

Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

12-JAN-2024

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: 105 Delhi Road, North Ryde, NSW, 2113

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

SAMPLE DETAILS

NMI Job Name: AECO06/231211

Total No. of Samples: 1

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N23/026093	18-DEC-2023	1302_QC200_231206	WATER 06/12/2023 09:50

SAMPLE RECEIVED CONDITION

Date samples received:	11-DEC-2023
Sample received in good order:	Yes
NMI Quotation no. provided:	NT_1302_PFASOMP_23
Client purchase order number:	60612561
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/231211 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	103	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	97	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	110	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	86	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	101	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	113	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	110	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	97	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	97	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	92	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	84	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	99	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	92	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	95	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	52	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	53	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	94	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	105	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	89	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	95	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	89	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	109	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	100	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	138	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	90	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1414076

Client	: [redacted]	**Job No.**	: AECO06/231211
	[redacted]	**Quote No.**	: QT-02232
	[redacted]	**Order No.**	: 60612561
		Date Received	: 11-DEC-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/026093	1302_QC200_231206	WATER 06/12/2023 09:50

Lab Reg No.	Units	N23/026093				Method
Date Sampled		06-DEC-2023				
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05				NR70
PFPeA (2706-90-3)	ug/L	<0.02				NR70
PFHxA (307-24-4)	ug/L	<0.01				NR70
PFHpA (375-85-9)	ug/L	<0.01				NR70
PFOA (335-67-1)	ug/L	<0.01				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	<0.01				NR70
PFHxS (355-46-4)	ug/L	0.017				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	0.021				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	<0.01				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/026093				
Date Sampled		06-DEC-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	80				NR70
PFPeA (Surrogate Recovery)	%	78				NR70
PFHxA (Surrogate Recovery)	%	66				NR70
PFHpA (Surrogate Recovery)	%	74				NR70
PFOA (Surrogate Recovery)	%	79				NR70
PFNA (Surrogate Recovery)	%	81				NR70
PFDA (Surrogate Recovery)	%	82				NR70
PFUdA (Surrogate Recovery)	%	72				NR70
PFDoA (Surrogate Recovery)	%	56				NR70
PFTeDA (Surrogate Recovery)	%	49				NR70
PFHxDA (Surrogate Recovery)	%	56				NR70
FOUEA (Surrogate Recovery)	%	77				NR70
PFBS (Surrogate Recovery)	%	66				NR70
PFHxS (Surrogate Recovery)	%	77				NR70
PFOS (Surrogate Recovery)	%	77				NR70
PFOSA (Surrogate Recovery)	%	46				NR70
N-MeFOSA (Surrogate Recovery)	%	30				NR70
N-EtFOSA (Surrogate Recovery)	%	32				NR70
N-MeFOSAA (Surrogate Recovery)	%	48				NR70
N-EtFOSAA (Surrogate Recovery)	%	51				NR70
N-MeFOSE (Surrogate Recovery)	%	39				NR70
N-EtFOSE (Surrogate Recovery)	%	29				NR70
4:2 FTS (Surrogate Recovery)	%	102				NR70
6:2 FTS (Surrogate Recovery)	%	86				NR70
8:2 FTS (Surrogate Recovery)	%	65				NR70
8:2 diPAP (Surrogate Recovery)	%	79				NR70
Dates						
Date extracted		14-DEC-2023				
Date analysed		15-DEC-2023				

N23/026093
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô

[redacted]

REPORT OF ANALYSIS

Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

SAMPLE DETAILS

NMI Job Name: AECO06/231222

Total No. of Samples: 1

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N23/027304	9-JAN-2024	1302_QC200_231213	WATER 13.12.23

SAMPLE RECEIVED CONDITION

Date samples received:	22-DEC-2023
Sample received in good order:	Yes
NMI Quotation no. provided:	NT_1302_PFASOMP_23
Client purchase order number:	60612561_4_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/231222 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	109	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	102	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	108	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	106	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	110	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	110	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	108	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	99	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	97	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	107	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	110	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	98	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	107	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	100	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	102	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	107	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	91	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	104	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	112	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	104	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	113	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	108	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	98	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1415182

Client	: [redacted]	**Job No.**	: AECO06/231222
	[redacted]	**Quote No.**	: QT-02232
	5[redacted]	**Order No.**	: 60612561_4_1
		Date Received	: 22-DEC-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	[redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/027304	1302_QC200_231213	WATER 13.12.23

Lab Reg No.		N23/027304				
Date Sampled		13-DEC-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05				NR70
PFPeA (2706-90-3)	ug/L	<0.02				NR70
PFHxA (307-24-4)	ug/L	<0.01				NR70
PFHpA (375-85-9)	ug/L	<0.01				NR70
PFOA (335-67-1)	ug/L	<0.01				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	<0.01				NR70
PFHxS (355-46-4)	ug/L	0.030				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	0.032				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	<0.01				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/027304				
Date Sampled		13-DEC-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	88				NR70
PFPeA (Surrogate Recovery)	%	91				NR70
PFHxA (Surrogate Recovery)	%	80				NR70
PFHpA (Surrogate Recovery)	%	89				NR70
PFOA (Surrogate Recovery)	%	89				NR70
PFNA (Surrogate Recovery)	%	82				NR70
PFDA (Surrogate Recovery)	%	84				NR70
PFUdA (Surrogate Recovery)	%	70				NR70
PFDoA (Surrogate Recovery)	%	57				NR70
PFTeDA (Surrogate Recovery)	%	53				NR70
PFHxDA (Surrogate Recovery)	%	68				NR70
FOUEA (Surrogate Recovery)	%	59				NR70
PFBS (Surrogate Recovery)	%	93				NR70
PFHxS (Surrogate Recovery)	%	95				NR70
PFOS (Surrogate Recovery)	%	85				NR70
PFOSA (Surrogate Recovery)	%	56				NR70
N-MeFOSA (Surrogate Recovery)	%	44				NR70
N-EtFOSA (Surrogate Recovery)	%	44				NR70
N-MeFOSAA (Surrogate Recovery)	%	50				NR70
N-EtFOSAA (Surrogate Recovery)	%	45				NR70
N-MeFOSE (Surrogate Recovery)	%	58				NR70
N-EtFOSE (Surrogate Recovery)	%	42				NR70
4:2 FTS (Surrogate Recovery)	%	102				NR70
6:2 FTS (Surrogate Recovery)	%	87				NR70
8:2 FTS (Surrogate Recovery)	%	105				NR70
8:2 diPAP (Surrogate Recovery)	%	85				NR70
Dates						
Date extracted		2-JAN-2023				
Date analysed		3-JAN-2023				

N23/027304
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô

[redacted]

REPORT OF ANALYSIS

Surro. ate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

08-JAN-2024

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: LEVEL 8
FORTITUDE VALLEY QLD 4006

Email: [redacted]

Telephone:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

SAMPLE DETAILS

NMI Job Name: AECO06/240129

Total No. of Samples: 1

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N24/001683	5-FEB-2024	1302_QC200_240124	WATER 23/01/2024 09:11AM

SAMPLE RECEIVED CONDITION

Date samples received:	29-JAN-2024
Sample received in good order:	Yes
NMI Quotation no. provided:	NT_1302_PFASOMP_24
Client purchase order number:	60612561/4_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/240129 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	134	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	133	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	117	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	118	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	122	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	134	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	129	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	122	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	113	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	137	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	107	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	100	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	122	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	119	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	124	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	118	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	113	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	120	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	124	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	118	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	106	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	109	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	127	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	121	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	85	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	110	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	105	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	137	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	135	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	125	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	98	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

REPORT OF ANALYSIS

Report No. RN1417898

Client	: [redacted]	**Job No.**	: AECO06/240129
		Quote No.	: QT-02232
		Order No.	: 60612561/4_1
		Date Received	: 29-JAN-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_24		
Your Client Services Manager	: Danny Slee	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N24/001683	1302_QC200_240124	WATER 23/01/2024 09:11AM

Lab Reg No.		N24/001683				
Date Sampled		23-JAN-2024				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05				NR70
PFPeA (2706-90-3)	ug/L	<0.02				NR70
PFHxA (307-24-4)	ug/L	<0.01				NR70
PFHpA (375-85-9)	ug/L	<0.01				NR70
PFOA (335-67-1)	ug/L	<0.01				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	<0.01				NR70
PFHxS (355-46-4)	ug/L	<0.01				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	0.029				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	<0.01				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.		N24/001683				
Date Sampled		23-JAN-2024				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	114				NR70
PFPeA (Surrogate Recovery)	%	110				NR70
PFHxA (Surrogate Recovery)	%	119				NR70
PFHpA (Surrogate Recovery)	%	120				NR70
PFOA (Surrogate Recovery)	%	115				NR70
PFNA (Surrogate Recovery)	%	108				NR70
PFDA (Surrogate Recovery)	%	96				NR70
PFUdA (Surrogate Recovery)	%	86				NR70
PFDoA (Surrogate Recovery)	%	90				NR70
PFTeDA (Surrogate Recovery)	%	94				NR70
PFHxDA (Surrogate Recovery)	%	121				NR70
FOUEA (Surrogate Recovery)	%	91				NR70
PFBS (Surrogate Recovery)	%	119				NR70
PFHxS (Surrogate Recovery)	%	119				NR70
PFOS (Surrogate Recovery)	%	102				NR70
PFOSA (Surrogate Recovery)	%	76				NR70
N-MeFOSA (Surrogate Recovery)	%	69				NR70
N-EtFOSA (Surrogate Recovery)	%	67				NR70
N-MeFOSAA (Surrogate Recovery)	%	80				NR70
N-EtFOSAA (Surrogate Recovery)	%	75				NR70
N-MeFOSE (Surrogate Recovery)	%	93				NR70
N-EtFOSE (Surrogate Recovery)	%	67				NR70
4:2 FTS (Surrogate Recovery)	%	116				NR70
6:2 FTS (Surrogate Recovery)	%	98				NR70
8:2 FTS (Surrogate Recovery)	%	84				NR70
8:2 diPAP (Surrogate Recovery)	%	115				NR70
Dates						
Date extracted		30-JAN-2024				
Date analysed		30-JAN-2024				

N24/001683
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

REPORT OF ANALYSIS

Report No. RN1417898

Lab Reg No.		N24/001683				
Date Sampled		23-JAN-2024				
	Units					Method

[redacted]

05-FEB-2024

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: 1[redacted]

SAMPLE DETAILS

NMI Job Name: AECO06/240216/1

Total No. of Samples: 1

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N24/003375	26-FEB-2024	1302_QC200_240215	WATER 15/02/2024 12:05 PM

SAMPLE RECEIVED CONDITION

Date samples received:	16-FEB-2024
Sample received in good order:	Yes
NMI Quotation no. provided:	NT_1302_PFASOMP_24
Client purchase order number:	60612561/4-1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/240216/1 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	137	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	129	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	127	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	129	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	128	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	123	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	126	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	132	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	111	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	102	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	132	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	121	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	128	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	127	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	117	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	132	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	123	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	125	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	120	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	129	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	86	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	96	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	111	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	120	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	109	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	112	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	108	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	123	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	119	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	82	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	102	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1420031

Client	: [redacted]	**Job No.**	: AECO06/240216/1
		Quote No.	: QT-02257
		Order No.	: 60612561/4-1
		Date Received	: 16-FEB-2024
Attention	: J[redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_24		
Your Client Services Manager	: [redacted]	**Phone**	:

Lab Reg No.	Sample Ref	Sample Description
N24/003375	1302_QC200_240215	WATER 15/02/2024 12:05 PM

Lab Reg No.		N24/003375				
Date Sampled		15-FEB-2024				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05				NR70
PFPeA (2706-90-3)	ug/L	<0.02				NR70
PFHxA (307-24-4)	ug/L	0.049				NR70
PFHpA (375-85-9)	ug/L	<0.01				NR70
PFOA (335-67-1)	ug/L	<0.01				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	0.019				NR70
PFHxS (355-46-4)	ug/L	0.26				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	0.53				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	0.022				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.		N24/003375				
Date Sampled		15-FEB-2024				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	146				NR70
PFPeA (Surrogate Recovery)	%	143				NR70
PFHxA (Surrogate Recovery)	%	146				NR70
PFHpA (Surrogate Recovery)	%	144				NR70
PFOA (Surrogate Recovery)	%	154				NR70
PFNA (Surrogate Recovery)	%	150				NR70
PFDA (Surrogate Recovery)	%	152				NR70
PFUdA (Surrogate Recovery)	%	150				NR70
PFDoA (Surrogate Recovery)	%	141				NR70
PFTeDA (Surrogate Recovery)	%	139				NR70
PFHxDA (Surrogate Recovery)	%	159				NR70
FOUEA (Surrogate Recovery)	%	128				NR70
PFBS (Surrogate Recovery)	%	167				NR70
PFHxS (Surrogate Recovery)	%	157				NR70
PFOS (Surrogate Recovery)	%	144				NR70
PFOSA (Surrogate Recovery)	%	125				NR70
N-MeFOSA (Surrogate Recovery)	%	131				NR70
N-EtFOSA (Surrogate Recovery)	%	124				NR70
N-MeFOSAA (Surrogate Recovery)	%	118				NR70
N-EtFOSAA (Surrogate Recovery)	%	131				NR70
N-MeFOSE (Surrogate Recovery)	%	86				NR70
N-EtFOSE (Surrogate Recovery)	%	167				NR70
4:2 FTS (Surrogate Recovery)	%	133				NR70
6:2 FTS (Surrogate Recovery)	%	114				NR70
8:2 FTS (Surrogate Recovery)	%	123				NR70
8:2 diPAP (Surrogate Recovery)	%	168				NR70
Dates						
Date extracted		26-FEB-2024				
Date analysed		26-FEB-2024				

N24/003375
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô

REPORT OF ANALYSIS

High PFAS surrogate recoveries accepted - results corrected for recovery.

[redacted]

27-FEB-2024

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

SAMPLE DETAILS

NMI Job Name: AECO06/240311/1

Total No. of Samples: 3

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N24/004961	18-MAR-2024	1302_QC200_240306	WATER 06/03/2024 01:17PM
N24/004962	18-MAR-2024	1302_QC201_240306	WATER 06/03/2024 03:24PM

SAMPLE RECEIVED CONDITION

Date samples received:	11-MAR-2024
Sample received in good order:	Yes
NMI Quotation no. provided:	NT_1302_PFASOMP_24
Client purchase order number:	60612561/4_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/240311/1 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	100	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	96	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	84	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	96	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	91	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	87	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	79	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	88	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	82	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	92	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	91	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	97	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	91	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	87	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	81	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	88	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	79	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	96	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	81	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	80	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	83	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	85	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	132	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	88	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	87	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	103	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	100	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	73	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	111	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/240311/1
		Quote No.	: QT-02257
		Order No.	: 60612561/4_1
		Date Received	: 11-MAR-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_24		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N24/004961	1302_QC200_240306	WATER 06/03/2024 01:17 PM
N24/004962	1302_QC201_240306	WATER 06/03/2024 03:24 PM
N24/004963	1302_QC202_240306	WATER 06/03/2024 04:37 PM

Lab Reg No.		N24/004961	N24/004962	N24/004963		
Date Sampled		06-MAR-2024	06-MAR-2024	06-MAR-2024		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05	<0.05	<0.05		NR70
PFPeA (2706-90-3)	ug/L	<0.02	0.021	0.048		NR70
PFHxA (307-24-4)	ug/L	<0.01	0.078	0.21		NR70
PFHpA (375-85-9)	ug/L	<0.01	0.015	0.021		NR70
PFOA (335-67-1)	ug/L	<0.01	0.031	0.051		NR70
PFNA (375-95-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFDA (335-76-2)	ug/L	<0.01	<0.01	<0.01		NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01	<0.01		NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02	<0.02		NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02	<0.02		NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02	<0.02		NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05	<0.05		NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01	<0.01		NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01	<0.01		NR70
PFPeS (2706-91-4)	ug/L	<0.01	0.032	0.11		NR70
PFHxS (355-46-4)	ug/L	<0.01	0.27	1.1		NR70
PFHpS (375-92-8)	ug/L	<0.01	<0.01	0.043		NR70
PFOS (1763-23-1)	ug/L	<0.02	0.49	1.3		NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFBS (375-73-5)	ug/L	<0.01	0.034	0.12		NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01	<0.01		NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02	<0.02		NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02	<0.02		NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01	<0.01		NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01	<0.01		NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05	<0.05		NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05	<0.05		NR70

REPORT OF ANALYSIS

Report No. RN1422105

Lab Reg No.		N24/004961	N24/004962	N24/004963		
Date Sampled		06-MAR-2024	06-MAR-2024	06-MAR-2024		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01	<0.01		NR70
6:2 FTS (27619-97-2)	ug/L	<0.01	<0.01	<0.01		NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01	<0.01		NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01	<0.01		NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02	<0.02		NR70
PFBA (Surrogate Recovery)	%	120	124	124		NR70
PFPeA (Surrogate Recovery)	%	109	120	122		NR70
PFHxA (Surrogate Recovery)	%	118	122	143		NR70
PFHpA (Surrogate Recovery)	%	128	125	141		NR70
PFOA (Surrogate Recovery)	%	122	116	121		NR70
PFNA (Surrogate Recovery)	%	103	96	98		NR70
PFDA (Surrogate Recovery)	%	100	86	94		NR70
PFUdA (Surrogate Recovery)	%	86	74	69		NR70
PFDoA (Surrogate Recovery)	%	60	70	58		NR70
PFTeDA (Surrogate Recovery)	%	62	70	74		NR70
PFHxDA (Surrogate Recovery)	%	95	97	106		NR70
FOUEA (Surrogate Recovery)	%	73	54	57		NR70
PFBS (Surrogate Recovery)	%	124	129	144		NR70
PFHxS (Surrogate Recovery)	%	127	119	135		NR70
PFOS (Surrogate Recovery)	%	111	105	110		NR70
PFOSA (Surrogate Recovery)	%	72	91	85		NR70
N-MeFOSA (Surrogate Recovery)	%	66	85	77		NR70
N-EtFOSA (Surrogate Recovery)	%	51	70	63		NR70
N-MeFOSAA (Surrogate Recovery)	%	55	61	54		NR70
N-EtFOSAA (Surrogate Recovery)	%	49	66	55		NR70
N-MeFOSE (Surrogate Recovery)	%	46	66	62		NR70
N-EtFOSE (Surrogate Recovery)	%	51	78	73		NR70
4:2 FTS (Surrogate Recovery)	%	151	151	176		NR70
6:2 FTS (Surrogate Recovery)	%	117	95	97		NR70
8:2 FTS (Surrogate Recovery)	%	92	92	89		NR70
8:2 diPAP (Surrogate Recovery)	%	77	69	68		NR70
Dates						
Date extracted		13-MAR-2024	13-MAR-2024	13-MAR-2024		
Date analysed		13-MAR-2024	13-MAR-2024	13-MAR-2024		

N24/004961
to
N24/004961

[redacted]

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

18-MAR-2024

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/240503 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	131	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	113	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	127	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	127	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	122	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	118	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	127	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	125	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	128	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	140	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	126	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	117	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	119	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	115	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	118	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	117	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	133	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	121	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	115	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	123	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	143	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	125	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	116	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	107	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	110	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	116	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	118	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	116	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	134	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	67	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	121	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed:

Date:

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1427936

Client	: [redacted]	**Job No.**	: AECO06/240503
		Quote No.	: QT-02257
		Order No.	: 60612561/4_1
		Date Received	: 03-MAY-2024
Attention	: J[redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_24		
Your Client Services Manager	: [redacted]	**Phone**	:

Lab Reg No.	Sample Ref	Sample Description
N24/009613	1302_QC200_240430	WATER 30/04/2024 03:32 PM

Lab Reg No.		N24/009613				
Date Sampled		30-APR-2024				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05				NR70
PFPeA (2706-90-3)	ug/L	<0.02				NR70
PFHxA (307-24-4)	ug/L	0.046				NR70
PFHpA (375-85-9)	ug/L	<0.01				NR70
PFOA (335-67-1)	ug/L	<0.01				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	0.031				NR70
PFHxS (355-46-4)	ug/L	0.26				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	0.37				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	0.029				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.		N24/009613				
Date Sampled		30-APR-2024				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	95				NR70
PFPeA (Surrogate Recovery)	%	93				NR70
PFHxA (Surrogate Recovery)	%	96				NR70
PFHpA (Surrogate Recovery)	%	93				NR70
PFOA (Surrogate Recovery)	%	92				NR70
PFNA (Surrogate Recovery)	%	78				NR70
PFDA (Surrogate Recovery)	%	73				NR70
PFUdA (Surrogate Recovery)	%	69				NR70
PFDoA (Surrogate Recovery)	%	68				NR70
PFTeDA (Surrogate Recovery)	%	74				NR70
PFHxDA (Surrogate Recovery)	%	81				NR70
FOUEA (Surrogate Recovery)	%	45				NR70
PFBS (Surrogate Recovery)	%	85				NR70
PFHxS (Surrogate Recovery)	%	91				NR70
PFOS (Surrogate Recovery)	%	91				NR70
PFOSA (Surrogate Recovery)	%	72				NR70
N-MeFOSA (Surrogate Recovery)	%	48				NR70
N-EtFOSA (Surrogate Recovery)	%	46				NR70
N-MeFOSAA (Surrogate Recovery)	%	54				NR70
N-EtFOSAA (Surrogate Recovery)	%	60				NR70
N-MeFOSE (Surrogate Recovery)	%	67				NR70
N-EtFOSE (Surrogate Recovery)	%	60				NR70
4:2 FTS (Surrogate Recovery)	%	74				NR70
6:2 FTS (Surrogate Recovery)	%	67				NR70
8:2 FTS (Surrogate Recovery)	%	67				NR70
8:2 diPAP (Surrogate Recovery)	%	63				NR70
Dates						
Date extracted		Not Tested				
Date analysed		Not Tested				

N24/009613
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô

REPORT OF ANALYSIS

Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

SAMPLE DETAILS

NMI Job Name: AECO06/240311

Total No. of Samples: 3

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N24/004958	18-MAR-2024	1302_QC200_240305	WATER 05/03/2024 01:59PM
N24/004959	18-MAR-2024	1302_QC201_240305	WATER 05/03/2024 04:14PM

SAMPLE RECEIVED CONDITION

Date samples received:	11-MAR-2024
Sample received in good order:	Yes
NMI Quotation no. provided:	NT_1302_PFASOMP_24
Client purchase order number:	60612561/4_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government
Department of Industry, Science and Resources
National Measurement Institute
NATA

REPORT OF ANALYSIS

Report No. RN1422100

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/240311
	[redacted]	**Quote No.**	: QT-02257
		Order No.	: 60612561/4_1
		Date Received	: 11-MAR-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_24		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N24/004958	1302_QC200_240305	WATER 05/03/2024 01:59 PM
N24/004959	1302_QC201_240305	WATER 05/03/2024 04:14 PM
N24/004960	1302_QC202_240305	WATER 05/03/2024 05:02 PM

Lab Reg No.		N24/004958	N24/004959	N24/004960		
Date Sampled		05-MAR-2024	05-MAR-2024	05-MAR-2024		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05	<0.05	0.59		NR70
PFPeA (2706-90-3)	ug/L	<0.02	<0.02	0.76		NR70
PFHxA (307-24-4)	ug/L	0.020	0.088	3.1		NR70
PFHpA (375-85-9)	ug/L	<0.01	<0.01	0.43		NR70
PFOA (335-67-1)	ug/L	<0.01	0.027	0.91		NR70
PFNA (375-95-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFDA (335-76-2)	ug/L	<0.01	<0.01	<0.01		NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01	<0.01		NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02	<0.02		NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02	<0.02		NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02	<0.02		NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05	<0.05		NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01	<0.01		NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01	<0.01		NR70
PFPeS (2706-91-4)	ug/L	0.013	0.066	1.8		NR70
PFHxS (355-46-4)	ug/L	0.17	0.68	12		NR70
PFHpS (375-92-8)	ug/L	<0.01	0.021	0.85		NR70
PFOS (1763-23-1)	ug/L	0.33	0.80	13		NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01	<0.01		NR70
PFBS (375-73-5)	ug/L	0.010	0.077	1.8		NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01	<0.01		NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02	<0.02		NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02	<0.02		NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01	<0.01		NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01	<0.01		NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05	<0.05		NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05	<0.05		NR70

REPORT OF ANALYSIS

Report No. RN1422100

Lab Reg No.		N24/004958	N24/004959	N24/004960		
Date Sampled		05-MAR-2024	05-MAR-2024	05-MAR-2024		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01	<0.01		NR70
6:2 FTS (27619-97-2)	ug/L	<0.01	<0.01	0.042		NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01	<0.01		NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01	<0.01		NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02	<0.02		NR70
PFBA (Surrogate Recovery)	%	117	122	120		NR70
PFPeA (Surrogate Recovery)	%	114	117	121		NR70
PFHxA (Surrogate Recovery)	%	124	129	115		NR70
PFHpA (Surrogate Recovery)	%	125	134	129		NR70
PFOA (Surrogate Recovery)	%	116	114	118		NR70
PFNA (Surrogate Recovery)	%	102	98	76		NR70
PFDA (Surrogate Recovery)	%	97	85	110		NR70
PFUdA (Surrogate Recovery)	%	87	75	112		NR70
PFDoA (Surrogate Recovery)	%	73	67	102		NR70
PFTeDA (Surrogate Recovery)	%	77	83	91		NR70
PFHxDA (Surrogate Recovery)	%	104	116	105		NR70
FOUEA (Surrogate Recovery)	%	58	53	92		NR70
PFBS (Surrogate Recovery)	%	138	131	144		NR70
PFHxS (Surrogate Recovery)	%	130	128	95		NR70
PFOS (Surrogate Recovery)	%	128	115	110		NR70
PFOSA (Surrogate Recovery)	%	84	89	84		NR70
N-MeFOSA (Surrogate Recovery)	%	78	90	90		NR70
N-EtFOSA (Surrogate Recovery)	%	77	78	84		NR70
N-MeFOSAA (Surrogate Recovery)	%	63	68	97		NR70
N-EtFOSAA (Surrogate Recovery)	%	85	73	109		NR70
N-MeFOSE (Surrogate Recovery)	%	62	68	63		NR70
N-EtFOSE (Surrogate Recovery)	%	73	79	79		NR70
4:2 FTS (Surrogate Recovery)	%	155	163	214		NR70
6:2 FTS (Surrogate Recovery)	%	100	97	123		NR70
8:2 FTS (Surrogate Recovery)	%	86	102	90		NR70
8:2 diPAP (Surrogate Recovery)	%	80	89	90		NR70
Dates						
Date extracted		13-MAR-2024	13-MAR-2024	13-MAR-2024		
Date analysed		13-MAR-2024	13-MAR-2024	13-MAR-2024		

N24/004958
to
N24/004960

[redacted]

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.

[redacted]

18-MAR-2024

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WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/240311 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	100	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	96	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	84	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	96	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	91	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	87	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	79	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	88	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	82	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	92	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	91	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	97	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	91	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	87	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	81	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	88	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	79	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	96	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	81	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	80	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	83	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	85	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	132	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	88	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	87	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	103	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	100	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	73	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	111	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed:

Date:

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

SAMPLE DETAILS

NMI Job Name: **AECO06/240327**

Total No. of Samples: **1**

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N24/006669	5-APR-2024	1302_QC200_240320	WATER 20/03/2024 01:30PM

SAMPLE RECEIVED CONDITION

Date samples received:	27-MAR-2024
Sample received in good order:	Yes
NMI Quotation no. provided:	NT_1302_PFASOMP_24
Client purchase order number:	60612561_4_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/240327 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	88	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	81	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	89	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	87	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	85	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	89	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	83	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	93	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	97	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	116	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	108	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	128	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	97	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	78	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	82	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	83	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	75	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	88	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	72	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	59	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	98	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	97	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	117	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	85	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	95	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	149	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	111	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	88	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	85	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	82	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	65	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	140	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1424007

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/240327
	[redacted]	**Quote No.**	: QT-02257
		Order No.	: 60612561_4_1
		Date Received	: 27-MAR-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: NT_1302_PFASOMP_24		
Your Client Services Manager	: [redacted]	**Phone**	:

Lab Reg No.	Sample Ref	Sample Description
N24/006669	1302_QC200_240320	WATER 20/03/2024 01:30PM

Lab Reg No.		N24/006669				
Date Sampled		20-MAR-2024				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	0.053				NR70
PFPeA (2706-90-3)	ug/L	0.073				NR70
PFHxA (307-24-4)	ug/L	0.35				NR70
PFHpA (375-85-9)	ug/L	0.032				NR70
PFOA (335-67-1)	ug/L	0.079				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	0.17				NR70
PFHxS (355-46-4)	ug/L	1.1				NR70
PFHpS (375-92-8)	ug/L	0.079				NR70
PFOS (1763-23-1)	ug/L	2.6				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	0.17				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.		N24/006669				
Date Sampled		20-MAR-2024				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	102				NR70
PFPeA (Surrogate Recovery)	%	102				NR70
PFHxA (Surrogate Recovery)	%	109				NR70
PFHpA (Surrogate Recovery)	%	110				NR70
PFOA (Surrogate Recovery)	%	107				NR70
PFNA (Surrogate Recovery)	%	96				NR70
PFDA (Surrogate Recovery)	%	100				NR70
PFUdA (Surrogate Recovery)	%	99				NR70
PFDoA (Surrogate Recovery)	%	95				NR70
PFTeDA (Surrogate Recovery)	%	99				NR70
PFHxDA (Surrogate Recovery)	%	94				NR70
FOUEA (Surrogate Recovery)	%	95				NR70
PFBS (Surrogate Recovery)	%	105				NR70
PFHxS (Surrogate Recovery)	%	111				NR70
PFOS (Surrogate Recovery)	%	99				NR70
PFOSA (Surrogate Recovery)	%	94				NR70
N-MeFOSA (Surrogate Recovery)	%	117				NR70
N-EtFOSA (Surrogate Recovery)	%	101				NR70
N-MeFOSAA (Surrogate Recovery)	%	99				NR70
N-EtFOSAA (Surrogate Recovery)	%	86				NR70
N-MeFOSE (Surrogate Recovery)	%	67				NR70
N-EtFOSE (Surrogate Recovery)	%	90				NR70
4:2 FTS (Surrogate Recovery)	%	87				NR70
6:2 FTS (Surrogate Recovery)	%	80				NR70
8:2 FTS (Surrogate Recovery)	%	81				NR70
8:2 diPAP (Surrogate Recovery)	%	78				NR70
Dates						
Date extracted		4-APR-2024				
Date analysed		4-APR-2024				

N24/006669
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

REPORT OF ANALYSIS

Lab Reg No.		N24/006669				
Date Sampled		20-MAR-2024				
	Units					Method

[redacted]

05-APR-2024

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
The testing was undertaken at: [redacted]

D R A F T

Appendix G

Calibration Certificates

Sampling round: Wet season **Location:** RAAF Base Darwin **Project number & name:** 60612561; 60676801

PM: **Field staff:** **Client: DoD**

Date	YSI #	Temp (°C)	pH 4		pH 7		DO (100%)		EC 1413 (µS/cm)		ORP (mV)		Initials
			Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	
06/12/2023	D	26.3	4.05	4.01	7.04	7.01	100	100	1482	1423	260.1	-	
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						

Notes:

Sampling round: Wet season **Location:** RAAF Base Darwin **Project number & name:** 60612561

PM: **Field staff:** **Client: DoD**

Date	YSI #	Temp (°C)	pH 4		pH 7		DO (100%)		EC 1413 (µS/cm)		ORP (mV)		Initials
			Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	
24/01/2024	D	25.3	4.02	4.01	7.04	7.01	100	100	1424	-	253.4	-	
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						

Notes:

Sampling round: Wet season **Location:** RAAF Base Darwin **Project number & name:** 60612561

PM: **Field staff:** **Client: DoD**

Date	YSI #	Temp (°C)	pH 4		pH 7		DO (100%)		EC 1413 (µS/cm)		ORP (mV)		Initials
			Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	
15/02/2024	D	24.9	4.03	4.01	7.03	7.01	100	100	1409	-	260.1	-	
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						

Notes:

Sampling round: End of Wet GW and SW **Location:** RAAF Base Darwin **Project number & name:** 60612561

PM: [redacted] **Field staff:** **Client: DoD**

Date	YSI #	Temp (°C)	pH 4		pH 7		DO (100%)		EC 1413 (µS/cm)		ORP (mV)		Initials
			Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	
18/3/2024	C	23.2	4.25	4.02	7.08	7.01	100	-	1432	1416	215	230	JB
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						

Notes:

Sampling round: End of Wet GW **Location:** RAAF Base Darwin **Project number & name:** 60612561; [redacted]

PM: [redacted] **Field staff:** [redacted] **Client:** DoD

Date	YSI #	Temp (°C)	pH 4		pH 7		DO (100%)		EC 1413 (µS/cm)		ORP (mV)		Initials
			Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	
4/3/24	D	24.4	—	—	—		100	—					j.b
5/3/24	D	24.8	4.05	4.01	7.06	7.02	100	94.2	.1482	1426	259.3	—	j.b
6/3/24	D	26.4	4.02	4.01	7.04	7.01	100	98.1	1440	1421	253.7	—	j.b
7/3/24	D	25.4	4.03	4.01	7.02	—	100	105.1	1440	—	150.2	—	j.b
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						
							100						

Notes: Split case for YSI probes. Still holds water while testing.

Sampling round: End of Wet GW **Location:** RAAF Base Darwin **Project number & name:** 60612561 [redacted]

PM: [redacted] **Field staff:** [redacted] **Client: DoD**

Date	YSI #	Temp (°C)	pH 4		pH 7		DO (100%)		EC 1413 (µS/cm)		ORP (mV)		Initials
			Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	Pre-cal	Post-cal	
19/03/24	B	22.8	4.43	3.99	6.67	7.01	100	90	1936	1380	247.8	–	CA
20/03/24	B	23.2	4.09	4.01	6.92	7.0	100	92	1370	1387	240.2	–	CA
							100						
							100						
							100						
							100						
							100						
							100						
							100						
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							100						

Notes:

APPENDIX C: TABLES

Table C1 – Groundwater Gauging and Field Parameters

Table C2 – Groundwater Analytical Results

Table C3 – Surface Water Field Parameters

Table C4 – Surface Water Analytical Results

Table C5 – Aquatic Biota Analytical Results

Location	Location Code	Date	Depth to Product (mbtoc)	Depth to Water (mbtoc)	Well Depth (mbtoc)	TOC (mAHD)	Water Elevation (mAHD)	Condition of Gatic	DO (mg/L)	EC (µS/cm)	TDS (calc)* (mg/L)	pH	Eh (mV)	Redox (corr) (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method
On-Base Monitoring Wells																				
RAAF Fire Station	**MW103**	2/11/2020	-	4.189	10.473	19.549	15.360	NR	0.76	179.3	116.545	5.59	47.9	253.7	31.4	Medium	Light Brown	No Odour	No Sheen	Hydrasleeve
		29/04/2021	-	4.201	12.620	19.549	15.348	NR	0.663	97.8	63.57	5.26	128	333.8	32.3	Turbid	NR	No Odour	NR	Hydrasleeve
		11/11/2021	-	4.328	12.450	19.549	15.221	Good	1.14	72.3	46.995	5.30	133.4	339.2	31.5	Medium	Light Brown	No Odour	NR	Hydrasleeve
		3/03/2022	-	2.483	12.230	19.549	17.066	NR	1.69	96.8	62.92	4.68	113.9	319.7	32.2	Clear	Brown	No Odour	NR	Hydrasleeve
		26/09/2022	-	3.770	12.260	19.549	15.779	Good	2.27	84.1	50.46	5.66	143.1	348.9	30	Low	Brown	No Odour	No Sheen	Hydrasleeve
		17/03/2023	-	2.940	12.100	19.549	16.609	Good	1.06	86.1	51.66	4.95	75.7	281.5	30.9	Moderate	Orange	No Odour	No Sheen	Hydrasleeve
		17/10/2023	-	3.765	12.320	19.549	15.784	Good	0.86	206.9	124.14	4.68	118.4	318.4	32.7	High turbidity at the bottom of sleeve	-	No Odour	No Sheen	Hydrasleeve
		5/03/2024	-	2.923	12.380	19.549	16.626	Good	1.96	107.9	64.74	5.45	121.8	321.8	31.4	-	Colourless	No Odour		Hydrasleeve
Down-gradient of Hangar 31	**MW107**	2/11/2020	-	4.189	13.399	21.941	17.752	NR	0.22	197.2	128.18	5.63	-1.5	204.3	31	Turbid	Brown	Slightly Organic	No Sheen	Hydrasleeve
		29/04/2021	-	4.201	15.360	21.941	17.740	NR	1.05	140.5	91.325	5.29	8.5	214.3	31.9	Turbid	Grey	Organic Odour	NR	Hydrasleeve
		11/11/2021	-	3.943	15.650	21.941	17.998	Good	0.44	57.1	37	4.97	91.8	297.6	31.1	Low	Light Brown	No Odour	NR	Hydrasleeve
		3/03/2022	-	2.483	14.940	21.941	19.458	NR	2.16	107.1	69.615	5.3	137.8	343.6	30.4	Clear	Orange	Slightly Organic	NR	Hydrasleeve
		26/09/2022	-	4.960	15.100	21.941	16.981	Good	0.65	39.9	23.94	4.84	155.2	361	29.3	Low	Grey	No Odour	No Sheen	Hydrasleeve
		17/03/2023	-	2.910	14.540	21.941	19.031	Good	0.78	74.2	44.52	4.41	103.5	309.3	31.1	High	Brown	No Odour	No Sheen	Hydrasleeve
		17/10/2023	-	5.262	15.750	21.941	16.679	Good	1.54	176.1	105.66	4.58	150.8	350.8	32.0	High turbidity at the bottom of sleeve	-	No Odour	No Sheen	Hydrasleeve
		5/03/2024	-	3.946	15.170	21.941	17.995	Good	1.36	109.5	65.7	5.37	143.3	343.3	31.1	-	Colourless	No Odour	No Sheen	Hydrasleeve
Former ARFF Fire Station	**MW115**	3/11/2020	-	8.310	13.195	32.407	24.097	NR	0.95	53.5	34.775	4.73	229.5	435.3	30.6	Low	Colourless	No Odour	No Sheen	Hydrasleeve
		29/04/2021	-	5.120	6.081	32.407	27.287	NR	3.71	45.5	29.575	7.28	164.4	370.2	31	Turbid	Brown	No Odour	NR	Hydrasleeve
		10/11/2021	-	6.710	15.050	32.407	25.697	Good	3.84	63.1	41	8.60	294	499.8	31.3	Low	Light Brown	No Odour	NR	Hydrasleeve
		7/03/2022	-	3.318	15.700	32.407	29.089	NR	3.92	57.5	37.375	4.05	157.1	362.9	31.9	NR	Orange/Brown	Slightly Organic	NR	Hydrasleeve
		27/09/2022	-	10.240	14.920	32.407	22.167	Good	NM	NM	NM	NM	NM	NM	NM	NR	NR	NR	NR	Hydrasleeve
		13/03/2023	-	3.750	14.730	32.407	28.657	Good	1.96	69.8	41.88	5.67	59.8	265.6	29.3	High	Brown	No Odour	No Sheen	Hydrasleeve
		17/10/2023	-	10.220	14.780	32.407	22.187	Good	4.68	140.6	84.36	4.70	129.1	329.1	30.8	Moderate turbidity	-	No Odour	No Sheen	Hydrasleeve
		20/03/2024	-	3.040	14.840	32.407	29.367	Good	4.65	35.4	21.24	4.66	153.1	353.1	31.3	-	Colourless	No Odour	No Sheen	Hydrasleeve
Down-gradient of RAAF Fire Station	**MW128**	3/11/2020	-	2.320	12.513	11.394	9.074	NR	1.01	66.5	43.225	3.98	267.2	473	31.5	Low	Light Brown	No Odour	No Sheen	Hydrasleeve
		12/12/2020	-	2.288	14.935	11.394	9.106	NR	1.76	66.6	43.29	4.19	103.9	309.7	43.29	NR	NR	NR	NR	Hydrasleeve
		25/02/2021	-	1.430	14.795	11.394	9.964	NR	0.98	84.7	55.055	4.32	193.3	399.1	31.5	NR	NR	NR	NR	Hydrasleeve
		6/05/2021	-	2.220	12.513	11.394	9.174	NR	0.83	69.6	45.24	4.67	273.4	479.2	31.7	Slightly Turbid	Light Grey/Brown	No Odour	NR	Hydrasleeve
		11/11/2021	-	2.270	14.770	11.394	9.124	Good	1.06	47.5	31	4.22	265.5	471.3	32.2	Low	Orange / Brown	No Odour	NR	Hydrasleeve
		3/03/2022	-	1.795	14.655	11.394	9.599	NR	2.06	145.1	94.315	4.39	135.5	341.3	31.9	NR	Orange/Brown	No Odour	NR	Hydrasleeve
		7/10/2022	-	2.130	14.620	11.394	9.264	Good	0.86	57.3	34.38	4.09	175.2	381	31.8	Low	Grey	No Odour	No Sheen	Hydrasleeve
		17/03/2023	-	1.900	12.270	11.394	9.494	Good	1.09	80.1	48.06	5.29	57.4	263.2	30.4	Moderate	Orange	No Odour	No Sheen	Hydrasleeve
		8/11/2023	-	-	-	11.394	-	Good	Field parameters lost, sample collected on 9/11/2023							-	-	-	-	Hydrasleeve
		4/03/2024	-	-	-	11.394	-	Good	3.46	101.9	61.14	4.87	138	338	31.6	-	Colourless	No Odour	No Sheen	Hydrasleeve
FFF1	**MW215**	3/11/2020	-	7.355	13.200	26.317	18.962	NR	1.37	112.3	72.995	5.4	73.5	279.3	31.1	Low	Light Grey	No Odour	No Sheen	Hydrasleeve
		11/11/2021	-	6.041	15.200	26.317	20.276	Good	0.79	38.7	25	4.64	163.3	369.1	30.6	Medium	Orange / Brown	No Odour	NR	Hydrasleeve
		27/09/2022	-	8.140	15.180	26.317	18.177	Good	0.58	68.8	41.28	5.55	75.6	281.4	29.5	Low	Grey	No Odour	No Sheen	Hydrasleeve
		17/03/2023	-	5.110	15.220	26.317	21.207	Good	0.90	93.6	56.16	5.38	108.2	314.0	31.2	High	Brown	No Odour	No Sheen	Hydrasleeve
		17/10/2023	-	8.865	15.460	26.317	17.452	Good	1.14	154.1	92.46	5.25	31.1	231.1	31.5	High turbidity at the bottom of sleeve	-	No Odour	No Sheen	Hydrasleeve
		5/03/2024	-	5.229	15.470	26.317	21.088	Good	1.56	100.6	60.36	5.56	144.1	344.1	30.5	-	Brown	No Odour	No Sheen	Hydrasleeve
FFF4 & FFF6	**MW133**	15/02/2021	-	4.630	15.855	30.902	26.272	NR	1.09	58.1	37.765	4.77	177.6	383.4	32.9	Clear	Clear	No Odour	No Sheen	Hydrasleeve
		6/05/2021	-	7.030	NM	30.902	23.872	NR	1.64	64.7	42.055	5.9	92	297.8	32.7	Clear	Clear	Hydrocarbon Odour	NR	Hydrasleeve
		9/06/2021	-	8.250	NM	30.902	22.652	NR	1.32	98.9	64.285	6.5	30.4	236.2	32.5	Clear	NR	Strong Hydrocarbon Odour	NR	Hydrasleeve
		11/11/2021	-	11.135	14.890	30.902	19.767	Good	0.68	89.6	58	7.92	14.1	219.9	31.6	Low	Grey	HC Odour	NR	Hydrasleeve
		4/03/2022	-	4.482	14.880	30.902	26.420	NR	1.44	61.2	39.78	5.1	132.5	338.3	32.2	Clear	Orange	Hydrocarbon Odour	NR	Hydrasleeve
		19/10/2022	-	13.151	16.700	30.902	17.751	Good	1.76	97.5	58.5	7.09	-24.5	181.3	27.1	Low	Grey	No Odour	No Sheen	Hydrasleeve
		15/03/2023	-	NM	NM	30.902	NM	Good	1.92	45.6	27.36	4.80	55.1	260.9	33.7	Moderate	Grey	No Odour	No Sheen	Hydrasleeve
		18/10/2023^	12.05	12.076	-	30.902	18.826	Good	1.09	142.4	85.44	5.02	80.4	280.4	30.9	Low	-	Strong hydrocarbon Odour	Sheen	Hydrasleeve
		4/03/2024	-	4.693	15.240	30.902	26.209	Good	4.23	48.7	29.22	5.19	138.7	338.7	28.7	-	Colourless	No Odour	No Sheen	Hydrasleeve
	MW303	3/11/2020	-	11.329	13.094	31.940	20.611	NR	1.2	388.5	252.525	5.75	-47.6	158.2	32.6	Low	Clear	Hydrocarbon Odour	No Sheen	Hydrasleeve
		15/02/2021	-	5.370	15.540	31.940	26.570	NR	0.07	114.8	74.62	5.58	-24.4	181.4	32.5	Clear	Clear	Hydrocarbon Odour	No Sheen	Hydrasleeve
		29/04/2021	-	8.428	15.530	31.940	23.512	NR	0.36	333.4	216.71	5.53	-62.9	142.9	33.1	Clear	Clear	Hydrocarbon Odour	NR	Hydrasleeve
		9/11/2021^	NAPL	12.628	NAPL	31.940	19.312	Good	1.13	324.8	211	5.55	-16.7	189.1	33.1	Low	Light Brown	HC Odour	NR	Hydrasleeve. LNAPL level will affect depth to water level.
		4/03/2022	-	6.149	15.500	31.940	25.791	NR	2.37	295.2	191.88	6.4	24	229.8	32.4	Clear	Clear	Hydrocarbon Odour	NR	Hydrasleeve
		27/09/2022	-	12.530	15.700	31.940	19.410	Good	0.78	330.4	198.24	6.07	-34.5	171.3	30.4	Low	Grey	Hydrocarbon	Hydrocarbon	Hydrasleeve
		18/10/2023	-	12.991	16.120	31.940	18.949	Good	0.84	427.0	256.20	5.65	-11.9	188.1	33.0	Moderate turbidity	-	Strong hydrocarbon Odour	Sheen	Hydrasleeve
		5/03/2024	-	2.738	14.380	31.940	29.202	Good	2.36	83.8	50.28	5.34	180.8	380.8	31.3	-	Colourless	No Odour	No Sheen	Hydrasleeve
North of FFF4 & FFF6	**MW205**	29/04/2021	-	4.445	14.840	29.571	25.126	NR	3.15	37.5	24.375	6.08	183.8	389.6	30.9	Turbid	Red/Brown	No Odour	NR	Hydrasleeve
		10/11/2021	-	9.563	14.950	29.571	20.008	Good	3.55	33.5	22	7.08	255	460.8	30.7	Low	Light Grey	No Odour	NR	Hydrasleeve
		7/03/2022	-	2.880	14.960	29.571	26.691	NR	2.56	38.5	25.025	4.51	114.1	319.9	31.6	Clear	Light Orange/Brown	Slight Organic Odour	NR	Hydrasleeve
		27/09/2022	-	9.000	14.840	29.571	20.571	Good	2.39	40.8	24.48	4.77	131.5	337.3	31.2	Low	Grey	No Odour	No Sheen	Hydrasleeve
		13/03/2023	-	2.600	14.880	29.571	26.971	Good	1.71	40.2	24.12	4.70	56.3	262.1	29.4	High	Brown	No Odour	No Sheen	Hydrasleeve
		17/10/2023	-	9.721	14.920	29.571	19.850	Good	-	121.6	72.96	4.52	159.7	359.7	30.6	Moderate turbidity		No Odour	No Sheen	Hydrasleeve
		20/03/2024	-	2.630	15.240	29.571	26.941	Good	4.23	18.2	10.92	5.09	143.2	343.2	31.7	-	Colourless	No Odour	No Sheen	Hydrasleeve
FFF5	**MW297**	2/11/2020	-	8.605	13.530	29.530	20.925	NR	1.43	42.6	27.69	4.75	98.3	304.1	31.7	Low	Clear	Hydrocarbon Odour	Slight Sheen	Hydrasleeve
		15/02/2021	-	3.329	14.880	29.530	26.201	NR	NM	NM	NM	NM	NM	NM	NM	NR	NR	No Odour	NR	Hydrasleeve
		29/04/2021	-	6.638	15.210	29.530	22.892	NR	0.65	54.7	35.555	4.53	182.1	387.9	32.1	Clear	Clear	Hydrocarbon Odour	NR	Hydrasleeve
		11/11/2021^	NAPL	8.394	NAPL	29.530	21.136	Good	1.12	33.9	22	6.09	69.3	275.1	30.8	Clear	Clear	HC Odour	NR	Hydrasleeve
		4/03/2022	-	4.118	15.220	29.530	25.412	NR	2.7	45.1	29.315	4.73	174.1	379.9	30.5	Clear	Clear	Hydrocarbon Odour	NR	Hydrasleeve
		27/09/2022	-	10.490	15.330	29.530	19.040	Good	0.53	45.6	27.36	5.15	54.8	260.6	30.4	Low	Grey	Hydrocarbon	Hydrocarbon	Hydrasleeve
		13/03/2023	-	NM	NM	29.530	NM	Good	4.01	34.8	20.88	4.80	49.7	255.5	30.6	High	Grey	No Odour	No Sheen	Hydrasleeve
		18/10/2023^	10.83	10.841	-	29.530	18.689	Good	1.01	121.2	72.72	5.17	41.6	241.6	30.4	Low	-	Strong hydrocarbon Odour	Sheen	Hydrasleeve
		5/03/2024	-	6.434	15.910	29.530	23.100	Good	0.95	174.6	104.76	6.28	13.6	213.6	31.5	-	Colourless	Hydrocarbon Odour	No Sheen	Hydrasleeve
North of FFF5	**MW112**	3/11/2020	-	7.054	12.343	26.971	19.917	NR	1.86	36.7	23.855	4.64	261.5	467.3	31.3	Medium	Colourless	No Odour	No Sheen	Hydrasleeve
		29/04/2021	-	5.143	14.110	26.971	21.828	NR	1.69	42.6	27.69	5.81	207.3	413.1	32.1	Turbid	Grey/Brown	No Odour	NR	Hydrasleeve
		10/11/2021	-	7.918	14.000	26.971	19.053	Good	3.68	29.7	19	5.68	292.8	498.6	31.3	Low	Grey	No Odour	NR	Hydrasleeve
		7/03/2022	-	2.839	13.835	26.971	24.132	NR	4.65	57.9	37.635	4.46	97.7	303.5	32.2	Clear	NR	No Odour	NR	Hydrasleeve
		7/10/2022	-	7.870	13.660	26.971	19.101	Good	2.08	40.2	24.12	4.47	131.5	337.3	32.3	Low	Grey	No Odour	No Sheen	Hydrasleeve
		13/03/2023	-	2.580	13.550	26.971	24.391	Good	1.07	263.7	158.22	5.89	63.2	269.0	30.2	High	Brown	No Odour	No Sheen	Hydrasleeve
		17/10/2023	-	-	-	26.971	-	Inaccessible								Not sampled as it is suspected to be under construction				
FFTA1	**MW139**	2/11/2020	-	6.635	13.583	28.548	21.913	NR	1.21	40.8	26.52	4.45	276.6	482.4	31.7	Medium	Grey/Brown	No Odour	No Sheen	Hydrasleeve
		6/05/2021	-	3.820	13.583	28.548	24.728	NR	1.92	46.9	30.485	5.25	280.7	486.5	31.3	Turbid	Light Grey/Brown	No Odour	NR	Hydrasleeve
		10/11/2021	-	9.110	15.520	28.548	19.438	Good	3.75	29.9	19	3.95	294.2	500	31.2	Low	Light Brown	No Odour	NR	Hydrasleeve
		4/03/2022	-	2.227	14.440	28.548	26.321	NR	1.94	46.2	30.03	4.95	159.3	365.1	31	Clear	Dark Brown	No Odour	NR	Hydrasleeve
		27/09/2022	-	9.990	15.420	28.548	18.558	Good	1.1	35.3	21.18	4.52	156.8	362.6	30.2	Low	Grey	No Odour	No Sheen	Hydrasleeve
		16/03/2023	-	2.350	15.430	28.548	26.198	Good	0.88	544.0	326.40	5.06	39.4	245.2	30.3	High	Brown	No Odour	No Sheen	Hydrasleeve
		17/10/2023	-	10.801	15.800	28.548	17.747	Good	3.35	41.2	24.72	4.69	118.4	318.4	31.4	Moderate turbidity	-	No Odour	No Sheen	Hydrasleeve
		5/03/2024	-	2.221	16.190	28.548	26.327	Good	2.32	76.8	46.08	5.00	190.2	390.2	29.8	-	Colourless	No Odour	No Sheen	Hydrasleeve
	MW422	2/11/2020	-	5.982	11.009	27.770	21.788	NR	3.5	42.2	27.43	5.14	251.5	457.3	32.6	Low	Yellow	No Odour	No Sheen	Hydrasleeve
		6/05/2021	-	3.220	11.009	27.770	24.550	NR	2.88	44.2	28.73	5.83	259.9	465.7	31.8	Clear	Clear/Light Grey	No Odour	NR	Hydrasleeve
		10/11/2021	-	7.258	12.870	27.770	20.512	Good	2.95	30.7	20	4.30	266.6	472.4	32.9	Low	Light Brown	No Odour	NR	Hydrasleeve
		4/03/2022	-	1.710	14.810	27.770	26.060	NR	1.71	57.6	37.44	5.2	146.8	352.6	32.7	Clear	Brown/Orange	No Odour	NR	Hydrasleeve
	MW502#	4/03/2024	-	2.571	14.770	28.862	26.291	Good	2.12	99.2	59.52	5.16	171.1	371.1	32.3	-	Colourless	No Odour	No Odour	Hydrasleeve
CFTA	**MW240**	3/11/2020	-	NM	15.010	25.600	NM	NR	2.36	62.1	40.365	4.38	276.9	482.7	31.1	Low	Clear	No Odour	No Sheen	Hydrasleeve
		10/12/2020	-	13.205	13.995	25.600	12.395	NR	2.58	52.1	33.865	4.82	158	363.8	30.6	NR	NR	NR	NR	Hydrasleeve
		1/03/2021	-	2.510	13.995	25.600	23.090	NR	0.9	51.5	33.475	4.37	245.9	451.7	32.6	NR	NR	NR	NR	Hydrasleeve
		29/04/2021	-	4.335	14.440	25.600	21.265	NR	1.4	97.6	63.44	5.3	97	302.8	33.1	Clear	Clear	No Odour	NR	Hydrasleeve
		3/03/2022	-	2.287	14.448	25.600	23.313	NR	2.35	53.6	34.84	5.24	94.2	300	30.9	Clear	Slightly Orange	No Odour	NR	Hydrasleeve
		27/09/2022	-	Dry	14.560	25.600	Dry	Good	NM	NM	NM	NM	NM	NM	NM	NR	NR	NR	NR	Hydrasleeve
		13/03/2023	-	2.220	14.210	25.600	23.380	No cap	4.21	30.7	18.42	4.59	-22.1	183.7	30.3	High	Brown	No Odour	No Sheen	Hydrasleeve
		17/10/2023	-	Dry	-	25.600	Dry	Dry								Dry - Not sampled				
		5/03/2024	-	2.061	14.960	25.600	23.539	Good	3.70	94.0	56.4	4.93	161.3	361.3	32.0	-	Colourless	No Odour	No Sheen	Hydrasleeve

Notes

mbtoc = meters below top of casing

mAHD = meters Australian Height Datum

DO = dissolved oxygen

EC = electrical conductivity

Eh = reduction oxidation

Temp = Temerature (degree centigade or ^{o}C)

NM = not measured

NR = not recorded

* = TDS values calculated by EC * 0.65

= MW502 first installed within the reporting period. No surveying data.

- = not recorded

Location	Location Code	Date	Depth to Product (mbtoc)	Depth to Water (mbtoc)	Well Depth (mbtoc)	TOC (mAHD)	Water Elevation (mAHD)	Condition of Gatic	DO (mg/L)	EC (µS/cm)	TDS (calc)* (mg/L)	pH	Eh (mV)	Redox (corr) (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method
CFTA	MW241	3/11/2020	-	11.969	12.821	25.010	13.041	NR	2.31	140.3	91.195	4.32	268.5	474.3	30.2	Low	Clear	No Odour	No Sheen	Hydrasleeve
		10/12/2020	-	13.580	15.000	25.010	11.430	NR	Not Able to Sample - Dry							Not sampled				
		1/03/2021	-	2.052	15.000	25.010	22.958	NR	2.94	44.1	28.665	3.9	217	422.8	32.3	NR	NR	NR	NR	Hydrasleeve
		29/04/2021	-	3.723	14.450	25.010	21.287	NR	1.98	49.7	32.305	4.51	213.1	418.9	32.9	Turbid	Grey	No Odour	NR	Hydrasleeve
		3/03/2022	-	1.864	14.468	25.010	23.146	NR	3.39	51.5	33.475	4.8	150.1	355.9	30.6	Clear	Brown/Orange	Slight Organic Odour	NR	Hydrasleeve
		27/09/2022	-	Dry	14.580	25.010	Dry	Good	NM	NM	NM	NM	NM	NM	NM	NR	NR	NR	NR	Hydrasleeve
		13/03/2023	-	1.820	14.450	25.010	23.190	Good	4.17	84.9	50.94	4.61	-75.0	130.8	30.0	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	Dry	-	25.010	Dry	Dry								Dry - Not sampled				
		4/03/2024	-	4.071	15.600	25.010	20.939	Good	2.59	80.7	48.42	4.71	155.7	355.7	31.8	-	Colourless	Hydrocarbon Odour	No sheen	Hydrasleeve
On-Base - West	MW451	27/09/2022	-	4.870	15.710	12.978	8.108	Good	0.99	88.4	53.04	5.23	155	360.8	30.1	Low	Grey	No Odour	No sheen	Hydrasleeve
		17/03/2023	-	3.180	15.600	12.978	9.798	Good	0.73	76.7	46.02	4.73	106.3	312.1	31.6	Moderate	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	4.999	39.310	12.978	7.979	Good	1.52	194.8	116.88	5.18	106.8	306.8	30.9	High turbidity	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	3.025	-	12.978	9.953	Good	2.20	91.7	55.02	6.33	113.5	313.5	31.1	-	Colourless	No Odour	No sheen	Hydrasleeve
	MW452	27/09/2022	-	2.730	13.450	11.390	8.660	Good	1.75	62.9	37.74	5.05	152.3	358.1	31.1	Low	Grey	No Odour	No sheen	Hydrasleeve
		17/03/2023	-	2.000	13.350	11.390	9.390	Good	4.01	34.8	20.88	4.52	49.3	255.1	30.6	Moderate	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	2.595	13.660	11.390	8.795	Good	1.35	83.1	49.86	4.69	153.8	353.8	31.3	High turbidity	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	2.101	13.680	11.390	9.289	Good	2.05	126.4	75.84	5.74	132.2	332.2	31.6	-	Colourless	No Odour	No sheen	Hydrasleeve
On-Base - North west	MW453	27/09/2022	-	Dry	15.110	17.125	Dry	Good	NM	NM	NM	NM	NM	NM	NM	NR	NR	NR	NR	Hydrasleeve
		13/03/2023	-	1.720	15.080	17.125	15.405	Good	3.61	31.3	18.78	4.29	65.7	271.5	30.7	Moderate	Grey	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	Dry	-	17.125	Dry	Dry								Dry - Not sampled				
		20/03/2024	-	1.615	15.630	17.125	15.510	Good	4.98	36.8	22.08	5.19	140	340	31.5	-	Colourless	No Odour	No sheen	Hydrasleeve
On-Base - South east	MW454	27/09/2022	-	7.550	12.030	26.268	18.718	Good	0.93	48.4	29.04	4.29	215.2	421	31.1	Low	Grey	No Odour	No sheen	Hydrasleeve
		16/03/2023	-	1.780	12.010	26.268	24.488	Good	1.28	156.7	94.00	4.68	64.1	269.9	29.5	Low	Orange	No Odour	No sheen	Hydrasleeve
		18/10/2023	-	8.311	11.280	26.268	17.957	Good	1.70	126.3	75.78	4.52	192.6	392.6	30.7	High	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	1.156	12.940	26.268	25.112	Good	4.51	79.7	47.82	4.99	181.2	381.2	31.2	-	Light brown	No Odour	No sheen	Hydrasleeve
Southern boundary of Base	MW141	2/11/2020	-	8.880	14.238	30.097	21.217	NR	3.62	60.3	39.195	5.26	177.8	383.6	30.4	Low	Light Grey	No Odour	No Sheen	Hydrasleeve
		6/05/2021	-	6.640	14.238	30.097	23.457	NR	0.73	64.5	41.925	5.69	236.1	441.9	30.1	Turbid	Light Grey/White	No Odour	NR	Hydrasleeve
		10/11/2021	-	11.351	15.980	30.097	18.746	Good	1.37	39.6	26	4.38	252.9	458.7	30.7	Low	Light Brown	No Odour	NR	Hydrasleeve
		4/03/2022	-	4.194	15.950	30.097	25.903	NR	1.75	58.6	38.09	4.75	152.9	358.7	31	Clear	Clear	No Odour	NR	Hydrasleeve
		27/09/2022	-	9.880	15.940	30.097	20.217	Good	NM	NM	NM	NM	NM	NM	NM	NR	NR	NR	NR	Hydrasleeve
		16/03/2023	-	4.340	14.830	30.097	25.757	Good	2.10	56.9	34.14	4.81	62.5	268.3	31.4	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	10.611	16.320	30.097	19.486	Good	1.13	164.1	98.46	4.56	97.2	297.2	31.1	Low	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	4.405	16.630	30.097	25.692	Good	1.80	32.5	19.5	4.69	195.9	395.9	30.0	-	Colourless	No Odour	No sheen	Hydrasleeve
	MW144	3/11/2020	-	9.078	14.055	30.686	21.608	NR	1.5	51.4	33.41	4.46	248.2	454	31.5	Low	Light Grey	Slight Organic Odour	No Sheen	Hydrasleeve
		29/04/2021	-	8.434	15.760	30.686	22.252	NR	2.43	43.6	28.34	5.1	241.2	447	32.3	Clear	Clear	No Odour	NR	Hydrasleeve
		10/11/2021	-	9.524	15.770	30.686	21.162	Good	2.54	57.8	38	4.51	256.5	462.3	32.5	Clear	Clear	No Odour	NR	Hydrasleeve
		4/03/2022	-	6.555	15.755	30.686	24.131	NR	4.42	42.6	27.69	4.65	148.6	354.4	31.3	Clear	Clear	No Odour	NR	Hydrasleeve
		27/09/2022	-	9.990	15.710	30.686	20.696	Good	1.32	39.2	23.52	4.48	192.1	397.9	30.4	Low	Grey	No Odour	No sheen	Hydrasleeve
		20/04/2023	-	6.800	14.700	30.686	23.886	Good	0.15	30.8	18.48	6.86	130.6	336.4	26.5	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	10.141	16.350	30.686	20.545	Good	3.34	187.8	112.68	4.53	142.7	342.7	31.5	Moderate	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	6.981	16.300	30.686	23.705	Good	4.23	68.2	40.92	4.71	181.6	381.6	30.7	-	Colourless	No Odour	No sheen	Hydrasleeve
Western boundary of Base	MW148	3/11/2020	-	3.050	11.482	12.156	9.106	NR	1.83	79.2	51.48	4.98	148.5	354.3	31.7	Low	Clear	No Odour	No Sheen	Hydrasleeve
		12/12/2020	-	2.938	12.900	12.156	9.218	NR	1.13	67.6	43.94	4.92	120.6	326.4	43.94	NR	NR	NR	NR	Hydrasleeve
		25/02/2021	-	3.478	12.850	12.156	8.678	NR	NM	NM	NM	NM	NM	NM	NM	NR	NR	NR	NR	Hydrasleeve
		6/05/2021	-	2.910	11.482	12.156	9.246	NR	0.79	92.7	60.255	5.18	108.7	314.5	33.1	Turbid	Orange	Hydrogen Sulfide Odour	NR	Hydrasleeve
		7/03/2022	-	NM	NM	12.156	NM	NR	Not Able to Sample - Bent PVC Casing							Not sampled				
		27/09/2022	-	3.390	11.440	12.156	8.766	Good	0.71	61.5	36.9	4.3	162.8	368.6	30.9	Low	Grey	No Odour	No sheen	Hydrasleeve
		17/03/2023	-	2.510	11.400	12.156	9.646	Good	0.98	102.3	61.38	5.61	93.2	299.0	31.2	Moderate	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	3.815	11.400	12.156	8.341	Good	0.86	185.4	111.24	4.97	98.6	298.6	31.1	High turbidity at the bottom of sleeve	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	2.456	11.820	12.156	9.700	Good	1.94	56.7	34.02	4.86	161.1	361.1	31.9	-	Colourless	No Odour	No sheen	Hydrasleeve
	MW201	11/11/2021	-	2.895	8.100	5.923	3.028	Good	1.03	63307	41150	3.94	275.4	481.2	32.7	Low	Orange / Brown	No Odour	NR	Hydrasleeve
		3/03/2022	-	2.175	8.065	5.923	3.748	NR	2.71	55572.0	36122	5.31	177.8	383.6	31.4	Clear	Orange / clear	No Odour	NR	Hydrasleeve
Rapid Creek - Eastern end	MW156	3/11/2020	-	3.465	11.500	23.043	19.578	NR	1.7	78.2	50.83	5.22	110.2	316	29.8	Low	White	No Odour	No Sheen	Hydrasleeve
		12/12/2020	-	3.535	12.535	23.043	19.508	NR	1.6	66.5	43.225	5.23	66.1	271.9	43.225	NR	NR	NR	NR	Hydrasleeve
		25/02/2021	-	2.336	12.066	23.043	20.707	NR	1.44	45	29.25	4.26	189	394.8	30.4	NR	NR	NR	NR	Hydrasleeve
		29/04/2021	-	2.502	12.600	23.043	20.541	NR	1.1	67.2	43.68	5.01	74.7	280.5	30.2	Clear	Colourless	Organic Odour	NR	Hydrasleeve
		10/11/2021	-	4.659	12.030	23.043	18.384	Good	1.64	30.5	20	4.72	280	485.8	30.3	Medium	Light Brown	No Odour	NR	Hydrasleeve
		7/03/2022	-	1.582	11.970	23.043	21.461	NR	3.49	37.8	24.57	4.28	160.7	366.5	30.2	Clear	Orange/Brown	No Odour	NR	Hydrasleeve
		27/09/2022	-	4.650	12.070	23.043	18.393	Good	1.35	49.9	29.94	5.13	139	344.8	30.1	Low	Grey	No Odour	No sheen	Hydrasleeve
		13/03/2023	-	1.510	11.900	23.043	21.533	Good	4.01	52.7	31.62	4.48	76.2	282.0	31.9	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	4.405	11.200	23.043	18.638	Good	2.71	94.9	56.94	4.60	183.5	383.5	29.5	Low	-	No Odour	No sheen	Hydrasleeve
		20/03/2024	-	1.421	11.870	23.043	21.622	Good	4.14	25.0	15	4.78	157.3	357.3	30.9	-	Colourless	No Odour	No sheen	Hydrasleeve
Off-Base Monitoring Wells																				
Off-Base - South	MW176	4/11/2020	-	3.878	9.043	18.739	14.861	NR	0.53	65.3	42.445	5.36	232.4	438.2	31.5	Turbid	Red/Brown	No Odour	No Sheen	Hydrasleeve
		28/04/2021	-	3.774	11.690	18.739	14.965	NR	0.83	92.9	60.385	5.66	116.4	322.2	30.3	Turbid	Brown	No Odour	NR	Hydrasleeve
		11/11/2021	-	4.152	11.680	18.739	14.587	Good	1.78	75.5	49	4.92	212	417.8	31.7	Low	Orange / Brown	No Odour	NR	Hydrasleeve
		2/03/2022	-	2.649	11.700	18.739	16.090	NR	2.6	148.8	96.72	5.8	111	316.8	30.8	Clear	Orange/Brown	No Odour	NR	Hydrasleeve
		26/09/2022	-	5.030	11.680	18.739	13.709	Good	1.67	36.4	21.84	5.06	140.3	346.1	29.7	Low	Grey	No Odour	No sheen	Hydrasleeve
		16/03/2023	-	3.160	11.670	18.739	15.579	Good	1.56	37.7	22.62	4.70	95.4	301.2	29.9	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	3.771	11.870	18.739	14.968	Good	3.39	261.0	156.60	5.40	133.3	333.3	30.0	High turbidity at the bottom of sleeve	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	3.011	12.020	18.739	15.728	Good	4.87	179.9	107.94	5.76	172.8	372.8	31.1	-	Brown	No Odour	No sheen	Hydrasleeve
	MW180	2/11/2020	-	10.930	12.990	29.056	18.126	NR	5.16	76.5	49.725	4.85	240.3	446.1	33.4	Low	Grey/Brown	No Odour	No Sheen	Hydrasleeve
		28/04/2021	-	7.097	12.990	29.056	21.959	NR	3.51	77	50.05	5.19	244	449.8	31.9	Turbid	Brown	No Odour	NR	Hydrasleeve
		11/11/2021	-	12.544	15.000	29.056	16.512	Good	3.51	50.7	33	4.37	283	488.8	32.1	Low	Yellow / Brown	No Odour	NR	Hydrasleeve
		2/03/2022	-	3.822	15.200	29.056	25.234	NR	5.2	65.1	42.315	4.82	134.6	340.4	33.2	Clear	Light Brown	No Odour	NR	Hydrasleeve
		26/09/2022	-	12.270	15.020	29.056	16.786	Good	1.51	63.9	38.34	4.4	166.9	372.7	31.5	Low	Red-brown	No Odour	No sheen	Hydrasleeve
		16/03/2023	-	3.850	14.820	29.056	25.206	Good	2.51	38.0	22.80	4.95	97.1	302.9	30.6	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	12.748	15.520	29.056	16.308	Good	4.46	159.2	95.52	4.22	192.4	392.4	33.7	High turbidity at the bottom of sleeve	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	4.001	15.410	29.056	25.055	Good	5.28	89.5	53.7	5.22	165.8	365.8	33.3	-	Colourless	No Odour	No sheen	Hydrasleeve
	MW200	2/11/2020	-	5.800	10.360	26.233	20.433	NR	1.22	55.6	36.14	5.36	152.6	358.4	31	Medium	Light Brown	Slight Organic Odour	No Sheen	Hydrasleeve
		28/04/2021	-	5.400	12.691	26.233	20.833	NR	0.86	97.7	63.505	5.52	187.7	393.5	30.1	Turbid	Grey	Organic Odour	NR	Hydrasleeve
		11/11/2021	-	6.501	11.730	26.233	19.732	Good	0.81	173.6	113	5.18	174.8	380.6	31.8	Low	Light Brown	No Odour	NR	Hydrasleeve
		2/03/2022	-	4.124	12.731	26.233	22.109	NR	2.07	61.5	39.975	4.66	129.1	334.9	30.9	Clear	Light Brown	No Odour	NR	Hydrasleeve
		26/09/2022	-	6.750	11.720	26.233	19.483	Good	0.97	38.4	23.04	4.53	161.2	367	29.5	Low	Grey	No Odour	No sheen	Hydrasleeve
		16/03/2023	-	4.340	11.630	26.233	21.893	Good	4.38	51.7	31.02	4.42	108.3	314.1	30.6	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	5.581	11.890	26.233	20.652	Good	2.10	131.2	78.72	4.69	130.1	330.1	30.2	Moderate turbidity at the bottom of the sleeve	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	4.199	11.910	26.233	22.034	Good	2.23	79.3	47.58	5.05	155	355	30.8	-	Light brown	No Odour	No sheen	Hydrasleeve
	MW209	3/11/2020	-	1.657	9.622	6.969	5.312	NR	1.88	1342	872.3	5.56	46	251.8	31.5	Turbid	Brown	No Odour	No Sheen	Hydrasleeve
		12/12/2020	-	1.716	11.745	6.969	5.253	NR	1.3	1521	988.65	5.15	88.7	294.5	NM	NR	NR	NR	NR	Hydrasleeve
		26/02/2021	-	0.848	11.745	6.969	6.121	NR	0.51	1806	1173.9	4.1	287.3	493.1	31.6	NR	NR	NR	NR	Hydrasleeve
		28/04/2021	-	1.384	14.910	6.969	5.585	NR	0.74	970	630.5	5.78	14	219.8	30.3	Turbid	Brown	Hydrogen Sulfide Odour	NR	Hydrasleeve
		10/11/2021	-	1.830	11.380	6.969	5.139	Good	1.01	838	545	4.97	94.8	300.6	31.2	Low	Light Brown	No Odour	NR	Hydrasleeve
		3/03/2022	-	0.885	11.325	6.969	6.084	NR	2.38	1450	942.5	5.25	156.6	362.4	32.2	Clear	Orange	No Odour	NR	Hydrasleeve
		26/09/2022	-	2.020	11.310	6.969	4.949	Good	1.28	1451	870.6	5.21	157.7	363.5	28.9	Moderate	Red-brown	No Odour	No sheen	Hydrasleeve
		16/03/2023	-	1.160	11.500	6.969	5.809	Good	1.23	56.0	33.60	4.46	90.6	296.4	29.8	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	2.325	11.380	6.969	4.644	Good	1.34	1794.0	1076.40	4.43	217.1	417.1	31.4	High	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	0.959	11.460	6.969	6.010	Good	1.91	1622.0	973.2	5.22	179.2	379.2	31.4	-	Brown	No Odour	No sheen	Hydrasleeve
Off-Base - North	MW185	2/11/2020	-	2.384	10.650	5.823	3.439	NR	1.67	759	493.35	5.55	122.2	328	31.4	Turbid	Brown	No Odour	No Sheen	Hydrasleeve
		28/04/2021	-	2.124	10.530	5.823	3.699	NR	0.71	1936	1258.4	7.77	159.3	365.1	31.3	Very Turbid	Red	No Odour	NR	Hydrasleeve
		11/11/2021	-	2.795	10.500	5.823	3.028	Good	1.50	412.3	268	4.44	255.9	461.7	31.5	Low	Light Brown	No Odour	NR	Hydrasleeve
		2/03/2022	-	1.188	10.600	5.823	4.635	NR	1.65	582	378.3	5.06	156.6	362.4	32	Clear	Clear	No Odour	NR	Hydrasleeve
		27/09/2022	-	3.240	10.370	5.823	2.583	Good	0.94	618	370.8	4.61	168	373.8	30.4	Low	Grey	No Odour	No sheen	Hydrasleeve
		17/03/2023	-	1.570	10.350	5.823	4.253	Good	1.83	95.6	57.36	5.67	60.7	266.5	30.6	High	Brown	No Odour	No sheen	Hydrasleeve
		18/10/2023	-	3.315	10.290	5.823	2.508	Good	3.12	696.0	417.60	4.66	177.9	377.9	31.2	Moderate	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	0.473	10.520	5.823	5.350	Good	1.93	483.7	290.22	5.39	166.4	366.4	30.9	-	Light brown	No Odour	No sheen	Hydrasleeve
Off-Base - West	MW210	2/11/2020	-	2.438	9.180	6.912	4.474	NR	1.98	243.5	158.275	5.8	29.1	234.9	32.2	Turbid	Brown	Organic Odour	No Sheen	Hydrasleeve
		28/04/2021	-	2.340	12.010	6.912	4.572	NR	0.71	289.6	188.24	6.13	1.4	207.2	31.1	Turbid	Brown	Hydrogen Sulfide Odour	NR	Hydrasleeve
		11/11/2021	-	2.338	11.590	6.912	4.574	Good	2.96	82.1	53	5.17	184.9	390.7	34	Low	Light Brown	No Odour	NR	Hydrasleeve
		3/03/2022	-	1.894	11.425	6.912	5.018	NR	2	110.7	71.955	5.9	140.3	346.1	33	Clear	Orange/Brown	Strong Organic Odour	NR	Hydrasleeve
		27/09/2022	-	3.040	11.380	6.912	3.872	Good	2.5	33.86	20.316	5.13	114.3	320.1	31.8	Moderate	Brown	No Odour	No sheen	Hydrasleeve
		16/03/2023	-	2.100	11.750	6.912	4.812	Good	0.73	298.7	179.22	6.20	58.6	264.4	30.9	High	Grey	Hydrocarbon	No sheen	Hydrasleeve
		17/10/2023	-	3.235	11.310	6.912	3.677	Good	0.91	255.8	153.48	4.98	105.5	305.5	32.8	High turbidity at the bottom of sleeve	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	1.919	11.520	6.912	4.993	Good	0.97	143.3	85.98	5.18	161.7	361.7	32.8	-	Colourless	No Odour	No sheen	Hydrasleeve

Notes

mbtoc = meters below top of casing

mAHD = meters Australian Height Datum

DO = dissolved oxygen

EC = electrical conductivity

Eh = reduction oxidation

Temp = Temerature (degree centigade or ^{o}C)

NM = not measured

NR = not recorded

* = TDS values calculated by EC * 0.65

= MW502 first installed within the reporting period. No surveying data.

^ = Groundwater is not corrected for fuel density and has not been included in interpretting groundwater flow direction.

- = not recorded

Location	Location Code	Date	Depth to Product (mbtoc)	Depth to Water (mbtoc)	Well Depth (mbtoc)	TOC (mAHD)	Water Elevation (mAHD)	Condition of Gatic	DO (mg/L)	EC (µS/cm)	TDS (calc)* (mg/L)	pH	Eh (mV)	Redox (corr) (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method
Off-Base - South west	**MW211**	3/11/2020	-	5.795	13.500	22.513	16.718	NR	1.42	67.4	43.81	4.67	225.5	431.3	30.9	Low	Grey/Brown	No Odour	No Sheen	Hydrasleeve
		28/04/2021	-	4.874	11.850	22.513	17.639	NR	1.85	33.6	21.84	5.83	187.1	392.9	31.1	Turbid	Brown	No Odour	NR	Hydrasleeve
		11/11/2021	-	6.502	14.960	22.513	16.011	Good	1.22	2206	1434	4.93	217.3	423.1	31.6	Low	Orange / Brown	No Odour	NR	Hydrasleeve
		2/03/2022	-	3.875	14.950	22.513	18.638	NR	2.2	266.3	173.095	5.35	132.5	338.3	31.2	Clear	Light Grey/Brown	No Odour	NR	Hydrasleeve
		26/09/2022	-	5.950	14.900	22.513	16.563	Good	1.99	471.2	282.72	6.07	160.3	366.1	27.8	Low	Grey	No Odour	No sheen	Hydrasleeve
		16/03/2023	-	3.430	14.940	22.513	19.083	Good	0.99	31.9	19.14	4.62	72.3	278.1	30.2	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	6.275	14.870	22.513	16.238	Good	4.51	184.3	110.58	4.74	198.1	398.1	31.7	Moderate turbidity at the bottom of the sleeve	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	4.212	15.220	22.513	18.301	Good	2.08	2.1	1.26	5.56	163.8	363.8	31.4	-	Colourless	No Odour	No sheen	Hydrasleeve
Rapid Creek	**MW190**	11/11/2021	-	1.779	12.400	11.342	9.563	Good	1.57	58	38	4.54	254.4	460.2	33.6	Low	Light Brown	No Odour	NR	Hydrasleeve
		27/09/2022	-	1.970	12.380	11.342	9.372	Good	1.31	47.2	28.32	4.51	152.3	358.1	32.7	Low	Grey	No Odour	No sheen	Hydrasleeve
		17/03/2023	-	1.490	12.390	11.342	9.852	Good	1.52	72.5	43.50	5.04	72.6	278.4	31.7	High	Brown	No Odour	No sheen	Hydrasleeve
		18/10/2023	-	2.089	12.560	11.342	9.253	Good	2.84	164.5	98.70	4.60	160.6	360.6	32.4	High		No Odour	No sheen	Hydrasleeve
		5/03/2024	-	1.631	12.550	11.342	9.711	Good	1.65	88.2	52.92	5.17	158.9	358.9	33.0		Colourless	No Odour	No sheen	Hydrasleeve
	MW191	3/11/2020	-	4.045	10.893	10.909	6.864	NR	2.31	62.8	40.82	5.4	190.9	396.7	31.6	Turbid	Light Brown	No Odour	No Sheen	Hydrasleeve
		28/04/2021	-	3.290	12.730	10.909	7.619	NR	2.43	95.6	62.14	5.97	213	418.8	33	Turbid	Brown	No Odour	NR	Hydrasleeve
		11/11/2021	-	4.029	12.720	10.909	6.880	Good	3.13	62.7	41	5.02	205.9	411.7	32.9	Low	Light Brown	No Odour	NR	Hydrasleeve
		7/03/2022	-	2.760	12.755	10.909	8.149	NR	2.25	64.6	41.99	5.08	159.1	364.9	32.5	Clear	Orange/Light Brown	No Odour	NR	Hydrasleeve
		27/09/2022	-	5.540	12.710	10.909	5.369	Good	1.25	61.4	36.84	4.43	167.6	373.4	31.8	Low	Grey	No Odour	No sheen	Hydrasleeve
		17/03/2023	-	2.770	12.690	10.909	8.139	Good	2.07	115.9	69.54	5.38	55.1	260.9	30.7	High	Brown	No Odour	No sheen	Hydrasleeve
		18/10/2023	-	5.835	12.840	10.909	5.074	Good	2.84	164.5	98.70	4.60	160.6	360.6	32.4	Moderate		No Odour	No sheen	Hydrasleeve
		5/03/2024	-	2.729	12.960	10.909	8.180	Good	3.88	110.5	66.3	5.11	158.9	358.9	32.8	-	Light brown	No Odour	No sheen	Hydrasleeve
Rapid Creek	**MW193**	2/11/2020	-	1.801	10.580	13.140	11.339	NR	2.9	90.1	58.565	5.11	152	357.8	32.4	Turbid	Brown	No Odour	No Sheen	Hydrasleeve
		6/05/2021	-	2.670	10.580	13.140	10.470	NR	1.67	53.8	34.97	6.79	232.8	438.6	30.5	Turbid	Brown	Organic Odour	NR	Hydrasleeve
	MW194	2/11/2020	-	2.541	11.650	18.238	15.697	NR	3.94	88.9	57.785	6.18	102.5	308.3	31.4	Low	Grey/Brown	Slight Organic Odour	No Sheen	Hydrasleeve
		6/05/2021	-	1.740	11.650	18.238	16.498	NR	0.98	60.2	39.13	7.62	164.5	370.3	27.7	Clear	Clear	Hydrogen Sulfide Odour	NR	Hydrasleeve
		11/11/2021	-	3.146	12.440	18.238	15.092	Good	2.00	23.6	15	4.27	258	463.8	32.6	Low	Light Brown	No Odour	NR	Hydrasleeve
		3/03/2022	-	1.319	12.440	18.238	16.919	NR	1.65	42.9	27.885	4.77	157.4	363.2	31.4	Clear	Clear	Slight Organic Odour	NR	Hydrasleeve
		27/09/2022	-	3.970	12.420	18.238	14.268	Good	1.37	33.5	20.1	4.55	141.6	347.4	30.3	Low	Grey	No Odour	No sheen	Hydrasleeve
		17/03/2023	-	1.370	12.400	18.238	16.868	Good	0.81	92.2	55.32	5.61	37.8	243.6	30.4	Moderate	Orange	No Odour	No sheen	Hydrasleeve
		18/10/2023	-	4.372	12.780	18.238	13.866	Good	1.33	91.8	55.08	4.75	150.6	350.6	30.8	Low	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	1.231	12.280	18.238	17.007	Good	1.58	68.3	40.98	4.90	163.2	363.2	31.8	-	Colourless	No Odour	No sheen	Hydrasleeve
	MW195	2/11/2020	-	2.009	10.679	16.738	14.729	NR	2.17	80.7	52.455	4.81	198.5	404.3	31.8	Medium	Yellow/Brown	No Odour	No Sheen	Hydrasleeve
		6/05/2021	-	1.610	10.679	16.738	15.128	NR	1.05	42.2	27.43	5.92			27.6	Medium	Brown/Light Brown	Organic Odour	NR	Hydrasleeve
		11/11/2021	-	2.351	11.280	16.738	14.387	Good	2.24	24.8	16	4.04	281.6	487.4	30.8	Low	Light Brown	No Odour	NR	Hydrasleeve
		3/03/2022	-	1.157	11.275	16.738	15.581	NR	1.78	62.8	40.82	5	149.3	355.1	31.3	Clear	Light Orange/White/Brown	No Odour	NR	Hydrasleeve
		27/09/2022	-	2.910	11.260	16.738	13.828	Good	1.45	37.2	22.32	4.56	160.1	365.9	29.8	Low	Orange	No Odour	No sheen	Hydrasleeve
		17/03/2023	-	1.590	11.160	16.738	15.148	Good	0.89	97.7	58.62	5.60	14.7	220.5	30.3	Moderate	Brown	No Odour	No sheen	Hydrasleeve
		18/10/2023	-	3.271	11.250	16.738	13.467	Good	1.40	125.9	75.54	4.98	146.5	346.5	30.5	High turbidity at the bottom of sleeve	-	No Odour	No sheen	Hydrasleeve
		5/03/2024	-	1.081	11.340	16.738	15.657	Good	2.25	60.3	36.18	5.12	156.2	356.2	31.7		Colourless	No Odour	No sheen	Hydrasleeve
FFTA2 (DIA)	**MW197**	3/11/2020	-	11.612	14.113	26.195	14.583	NR	0.99	121.1	78.715	5.05	226.2	432	30.6	Medium	Light Grey	No Odour	No Sheen	Hydrasleeve
		29/04/2021	-	6.085	15.040	26.195	20.110	NR	0.49	68.3	44.395	4.89	116	321.8	31	Turbid	Brown	No Odour	NR	Hydrasleeve
		9/11/2021	-	13.225	15.780	26.195	12.970	Good	2.72	105	68	6.65	214.3	420.1	30.9	Low	Light Grey	Slight Organic Odour	NR	Hydrasleeve
		3/03/2022	-	3.826	15.780	26.195	22.369	NR	1.5	66.1	42.965	5.42	34.2	240	29.6	Clear	Clear	Slight Organic Odour	NR	Hydrasleeve
		27/09/2022	-	Dry	15.840	26.195	Dry	Good	NM	NM	NM	NM	NM	NM	NM	NR	NR	NR	NR	Hydrasleeve
		13/03/2023	-	3.740	7.650	26.195	22.455	Good	2.44	33.1	19.86	4.45	15.2	221.0	29.1	High	Brown	No Odour	No sheen	Hydrasleeve
		17/10/2023	-	Dry	-	26.195	Dry				Dry					Dry - Not sampled				
		20/03/2024	-	3.612	15.790	26.195	22.583	Good	4.95	72.6	43.56	4.68	141.3	341.3	30.2	-	Colourless	No Odour	No sheen	Hydrasleeve

Notes

mbtoc = meters below top of casing

mAHD = meters Australian Height Datum

DO = dissolved oxygen

EC = electrical conductivity

Eh = reduction oxidation

Temp = Temerature (degree centigade or ^{o}C)

NM = not measured

NR = not recorded

* = TDS values calculated by EC * 0.65

= MW502 first installed within the reporting period. No surveying data.

^ = Groundwater is not corrected for fuel density and has not been included in interpretting groundwater flow direction.

- = not recorded

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
On-Base Monitoring Wells																					
RAAF Fire Station	**MW103**	**1302_MW103_170724**	**24 Jul 2017**	**555927**	**Normal**	0.29	0.37	4.3	0.29	13	<0.01	0.07	0.18	0.79	0.1	0.25	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW103_170822	**22 Aug 2017**	**560107**	**Normal**	<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
		1302_MW103_170823	**23 Aug 2017**	**560306**	**Normal**	0.3	0.34	4.5	0.23	8.2	<0.01	0.08	0.17	0.81	0.14	0.31	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW103_171114	**14 Nov 2017**	**572746**	**Normal**	0.03	0.04	0.56	0.02	1.4	<0.01	<0.05	0.02	0.07	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW103_180308	**08 Mar 2018**	**588949**	**Normal**	0.22	0.35	3.2	0.2	14	<0.01	0.07	0.13	0.76	0.1	0.2	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW103_181213	**13 Dec 2018**	**633394**	**Normal**	0.1	0.19	2.7	0.14	14	<0.01	0.1	0.17	0.7	0.08	0.21	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW103_190320	**20 Mar 2019**	**646323**	**Normal**	0.23	0.34	3	0.25	8.1	<0.01	0.07	0.12	0.58	0.08	0.18	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QCGW04_190320	**20 Mar 2019**	**646323**	**Field_D**	0.24	0.32	3.2	0.25	7.7	<0.01	0.07	0.13	0.56	0.08	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
		QCGW05	**20 Mar 2019**	**EB1907348**	**Interlab_D**	0.2	0.27	3.44	0.19	9.66	<0.02	<0.1	0.11	0.57	0.08	0.2	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_191216	**16 Dec 2019**	**ES1942302**	**Normal**	0.24	0.39	4.16	0.25	17.5	<0.02	<0.1	0.15	0.86	0.09	0.23	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_200415	**16 Apr 2020**	**ES2012928**	**Normal**	0.28	0.32	4.1	0.27	11.9	<0.02	<0.1	0.16	0.91	0.12	0.28	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_201102	**02 Nov 2020**	**ES2039162**	**Normal**	0.57	1.16	11.4	0.88	30.6	0.1	<0.1	0.19	1.92	0.28	0.79	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_210429	**29 Apr 2021**	**ES2116496**	**Normal**	0.39	0.79	10.6	0.48	17.3	<0.02	<0.1	0.26	1.61	0.19	0.44	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC202_210429	**29 Apr 2021**	**RN1314232**	**Interlab_D**	0.43	0.6	7	0.3	15	<0.01	0.11	0.24	1.2	0.16	0.4	0.012	<0.01	<0.01	<0.01	<0.02
		1302_QC102_210429	**29 Apr 2021**	**ES2116496**	**Field_D**	0.53	1.12	15	0.71	25.3	0.02	0.1	0.36	2.24	0.26	0.62	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_211111	**11 Nov 2021**	**ES2141185**	**Normal**	0.69	0.96	10.6	0.65	33.2	<0.02	0.1	0.31	2.42	0.26	0.69	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC202_211111	**11 Nov 2021**	**RN1334898**	**Interlab_D**	0.54	0.64	7.4	0.37	24	<0.01	0.14	0.26	1.4	0.2	0.51	0.013	<0.01	<0.01	<0.01	<0.02
		1302_QC102_211111	**11 Nov 2021**	**ES2141185**	**Field_D**	0.67	0.94	10.8	0.63	31	<0.02	0.1	0.31	2.33	0.25	0.68	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_220307	**07 Mar 2022**	**ES2208419**	**Normal**	0.25	0.35	4.64	0.29	17.3	<0.02	<0.1	0.15	0.95	0.09	0.28	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_220929	**29 Sep 2022**	**ES2235227**	**Normal**	0.97	1.98	19.8	0.9	28.8	0.04	0.1	0.38	3.95	0.44	1.11	0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_230323	**23 Mar 2023**	**ES2310999**	**Normal**	0.21	0.26	3.21	0.29	10.9	<0.02	0.2	1.09	1.14	0.16	0.23	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_231030	**30 Oct 2023**	**ES2337724**	**Normal**	0.24	0.35	3.66	0.27	9.93	<0.02	0.1	0.36	0.71	0.1	0.19	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW103_240305	**05 Mar 2024**	**ES2407635**	**Normal**	0.16	0.25	2.78	0.17	6.48	<0.02	0.2	0.88	1.07	0.2	0.2	<0.02	<0.02	<0.02	<0.02	<0.02
Down-gradient of Hangar 31	**MW107**	**1302_MW107_170710**	**10 Jul 2017**	**553811**	**Normal**	0.32	0.52	4.1	0.61	10	<0.01	0.09	0.19	0.91	0.12	0.29	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW107_170829	**29 Aug 2017**	**561056**	**Normal**	0.37	0.47	3.8	0.28	8.3	<0.01	0.09	0.17	0.76	0.1	0.21	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW107_171114	**14 Nov 2017**	**572746**	**Normal**	0.32	0.49	4.8	0.35	10	<0.01	0.12	0.18	0.73	0.13	0.26	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW107_180112	**12 Jan 2018**	**580464**	**Normal**	0.3	0.43	3.9	0.21	7.9	<0.01	0.09	0.19	0.77	0.12	0.19	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW107_180308	**08 Mar 2018**	**588968**	**Normal**	0.18	0.34	2.7	0.18	6.1	<0.01	0.08	0.18	0.59	0.09	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW107_181213	**13 Dec 2018**	**633394**	**Normal**	0.3	0.51	4.3	0.23	9.6	<0.01	0.1	0.2	0.69	0.09	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW107_190320	**20 Mar 2019**	**646323**	**Normal**	0.32	0.42	3	0.27	6.1	<0.01	0.1	0.17	0.62	0.1	0.16	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW107_191216	**16 Dec 2019**	**ES1942302**	**Normal**	0.33	0.42	3.38	0.24	6.28	<0.02	<0.1	0.14	0.7	0.09	0.15	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_200414	**16 Apr 2020**	**ES2012928**	**Normal**	0.41	0.4	3.98	0.23	6.4	<0.02	<0.1	0.16	0.93	0.13	0.22	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_201102	**02 Nov 2020**	**ES2039162**	**Normal**	0.32	0.57	3.93	0.3	6.95	<0.02	<0.1	0.12	0.71	0.13	0.24	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC101_201102	**02 Nov 2020**	**ES2039162**	**Field_D**	0.34	0.61	4.28	0.29	6.65	<0.02	<0.1	0.12	0.74	0.14	0.23	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_210429	**29 Apr 2021**	**ES2116496**	**Normal**	0.26	0.36	3.35	0.22	6.23	<0.02	<0.1	0.13	0.66	0.09	0.16	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_211111	**11 Nov 2021**	**ES2141185**	**Normal**	0.46	0.51	4.7	0.3	8.51	<0.02	<0.1	0.19	1.07	0.13	0.27	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_220309	**09 Mar 2022**	**ES2208419**	**Normal**	0.24	0.33	3.06	0.2	5.4	<0.02	<0.1	0.16	0.79	0.07	0.16	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_220929	**29 Sep 2022**	**ES2235227**	**Normal**	0.24	0.33	2.75	0.2	6.36	<0.02	<0.1	0.12	0.67	0.08	0.17	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_230323	**23 Mar 2023**	**ES2310999**	**Normal**	0.25	0.32	3.18	0.31	8.66	<0.02	0.3	1.09	1.12	0.16	0.22	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_231030	**30 Oct 2023**	**ES2337724**	**Normal**	0.23	0.31	2.67	0.18	5.48	<0.02	0.1	0.27	0.59	0.09	0.14	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_240305	**05 Mar 2024**	**ES2407635**	**Normal**	0.13	0.17	1.73	0.13	4.51	<0.02	0.2	0.7	0.74	0.14	0.13	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW107_240318	**18 Mar 2024**	**1079850**	**Normal**	0.19	0.27	2.3	0.2	6.2	<0.01	0.23	0.82	0.97	0.17	0.13	<0.01	<0.01	<0.01	<0.01	<0.01
Former ARFF Fire Station	**MW115**	**1302_MW115_170803**	**03 Aug 2017**	**557384**	**Normal**	4.3	4	31	2.3	80	0.02	0.89	1.7	7.9	0.83	2.1	0.03	<0.01	<0.01	<0.01	<0.01
		1302_MW115_170824	**24 Aug 2017**	**560518**	**Normal**	5.7	5.1	46	6.4	340	<0.01	1.4	2.9	10	1.2	3	0.03	0.01	<0.01	<0.01	<0.01
		1302_MW115_171113	**13 Nov 2017**	**572745**	**Normal**	7.4	6.2	57	6.9	260	<0.2	1.7	3.6	14	1.7	4.1	<0.2	<0.2	<0.2	<0.2	<0.2
		1302_MW115_180112	**12 Jan 2018**	**580464**	**Normal**	3.7	4	28	2.7	130	<0.2	0.7	1.4	6.8	0.71	1.9	<0.2	<0.2	<0.2	<0.2	<0.2
		1302_MW115_180306	**06 Mar 2018**	**588389**	**Normal**	2.3	2.7	16	3	52	0.06	0.37	0.77	4.1	0.44	1.3	0.02	<0.01	<0.01	<0.01	<0.01
		1302_MW115_7_180509	**09 May 2018**	**598367**	**Normal**	3.1	3.2	33	2.3	89	<0.01	0.68	1.5	6.7	0.7	2.3	0.03	<0.01	<0.01	<0.01	<0.01
		1302_MW115_181215	**15 Dec 2018**	**633343**	**Normal**	6.1	5.7	59	6.5	220	<0.2	1.4	2.8	13	1.5	3.8	<0.2	<0.2	<0.2	<0.2	<0.2
		1302_MW115_190320	**20 Mar 2019**	**646323**	**Normal**	2.9	2.4	18	1.5	73	0.05	0.6	0.98	4.5	0.53	1.5	0.02	<0.01	<0.01	<0.01	<0.01
		1302_MW115_191217	**17 Dec 2019**	**ES1942302**	**Normal**	6.64	7.24	45.8	6.94	255	0.21	1.5	2.56	9.6	1.31	3.05	0.03	<0.02	<0.02	<0.02	<0.02
		1302_MW115_200414	**16 Apr 2020**	**ES2012928**	**Normal**	2.74	2.52	22.2	1.88	71.6	<0.05	0.4	0.86	5.38	0.44	1.48	<0.05	<0.05	<0.05	<0.05	<0.05
		1302_MW115_201103	**03 Nov 2020**	**ES2039162**	**Normal**	5.58	6.1	40.1	4.82	269	0.38	1.2	2.15	10.4	1.18	3.15	0.04	<0.02	<0.02	<0.02	<0.02
		1302_MW115_210429	**29 Apr 2021**	**ES2116496**	**Normal**	2.76	4.36	29.4	3.41	80.5	0.1	0.5	1.15	6.76	0.6	1.47	0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW115_211110	**10 Nov 2021**	**ES2141185**	**Normal**	3.32	2.75	26.4	3.76	62.2	0.23	0.5	1.04	7.61	0.67	1.82	0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW115_220310	**10 Mar 2022**	**ES2208419**	**Normal**	3.48	3.21	25.9	2.33	59.3	0.12	0.6	1.03	6.92	0.66	1.76	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW115_12.0_221104	**04 Nov 2022**	**938328**	**Normal**	3.6	3.3	27	2.7	170	0.09	0.87	1.3	6	0.69	1.1	0.02	<0.01	0.01	<0.01	<0.01
		1302_MW115_230314	**14 Mar 2023**	**ES2310999**	**Normal**	1.47	2.12	16.3	1.39	47.3	0.06	0.2	0.56	3.16	0.34	1.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC200_230314	**14 Mar 2023**	**RN1389152**	**Interlab_D**	1.3	1.4	14	0.99	30	<0.01	0.27	0.44	2.3	0.27	0.79	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_230314	**14 Mar 2023**	**ES2310999**	**Field_D**	1.63	2.35	16.9	1.65	47.6	0.07	0.2	0.63	3.51	0.38	1.14	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW115_231031	**31 Oct 2023**	**ES2337724**	**Normal**	3.92	3.89	27.2	4.38	201	0.13	0.9	1.54	7.22	0.81	2.36	<0.05	<0.05	<0.05	<0.05	<0.05

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_MW115_240320	**20 Mar 2024**	**ES2409473**	**Normal**	1.38	2.01	15.9	1.85	51	0.04	0.3	0.5	3.06	0.36	1.2	<0.02	<0.02	<0.02	<0.02	<0.02
Down-gradient of RAAF Fire Station	**MW128**	**1302_MW128_170724**	**24 Jul 2017**	**555927**	**Normal**	0.26	0.28	2.5	0.19	7.1	<0.01	0.06	0.12	0.54	0.07	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_170901	**01 Sep 2017**	**561891**	**Normal**	0.23	0.37	3.2	0.22	6.8	<0.01	0.07	0.14	0.6	0.09	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_171116	**16 Nov 2017**	**573039**	**Normal**	0.24	0.33	3.3	0.24	7.1	<0.01	0.09	0.13	0.57	0.09	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_180115	**15 Jan 2018**	**580450**	**Normal**	0.31	0.36	2.9	0.14	6.8	<0.01	0.07	0.14	0.61	0.07	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_180308	**08 Mar 2018**	**588759**	**Normal**	0.29	0.34	3	0.18	8	<0.01	0.07	0.11	0.57	0.08	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_4_180509	**09 May 2018**	**598367**	**Normal**	0.3	0.38	3.8	0.27	6.2	<0.01	0.07	0.14	0.68	0.1	0.2	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_181213	**13 Dec 2018**	**633394**	**Normal**	0.19	0.29	2.8	0.18	7.4	<0.01	<0.05	0.06	0.29	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_190321	**21 Mar 2019**	**646787**	**Normal**	0.23	0.27	2.7	0.14	5.2	<0.01	0.08	0.15	0.59	0.08	0.18	<0.01	<0.01	<0.01	<0.01	<0.01
		QCGW09_190321	**21 Mar 2019**	**EB1907601**	**Interlab_D**	0.25	0.26	2.69	0.17	5.82	<0.02	<0.1	0.11	0.52	0.06	0.14	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCGW08_190321	**21 Mar 2019**	**646787**	**Field_D**	0.24	0.29	2.4	0.15	5.2	<0.01	0.08	0.15	0.59	0.08	0.18	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_191217	**17 Dec 2019**	**ES1942302**	**Normal**	0.22	0.28	2.49	0.17	5.92	<0.02	<0.1	0.12	0.52	0.07	0.13	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_200415	**16 Apr 2020**	**ES2012928**	**Normal**	0.29	0.26	2.9	0.2	6.39	<0.02	<0.1	0.13	0.72	0.08	0.18	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC201_200415	**16 Apr 2020**	**RN1271840**	**Interlab_D**	0.2	0.23	2.5	0.15	5.2	<0.01	0.069	0.11	0.47	0.059	0.12	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC101_200415	**16 Apr 2020**	**ES2012928**	**Field_D**	0.34	0.29	3.28	0.23	7.5	<0.02	<0.1	0.15	0.79	0.09	0.2	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_201103	**03 Nov 2020**	**ES2039162**	**Normal**	0.3	0.39	3.55	0.24	8.49	<0.02	<0.1	0.16	0.71	0.1	0.21	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_201212	**12 Dec 2020**	**763330**	**Normal**	0.2	0.22	2.5	0.14	8.2	<0.01	0.07	0.09	0.51	0.07	0.16	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_210225	**25 Feb 2021**	**778121**	**Normal**	0.25	0.4	3.6	0.24	12	<0.01	0.06	0.14	0.59	0.07	0.16	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC102_210225	**25 Feb 2021**	**778121**	**Field_D**	0.26	0.35	3.8	0.23	18	<0.01	0.07	0.12	0.59	0.07	0.15	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW128_210506	**06 May 2021**	**ES2117036**	**Normal**	0.16	0.22	2.11	0.14	3.56	<0.02	<0.1	0.12	0.47	0.06	0.13	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC204_210506	**06 May 2021**	**RN1314391**	**Interlab_D**	0.18	0.18	1.9	0.092	3.3	<0.01	0.057	0.092	0.34	0.051	0.11	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC104_210506	**06 May 2021**	**ES2117036**	**Field_D**	0.16	0.22	2.1	0.14	4.64	<0.02	<0.1	0.12	0.46	0.06	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_211111	**11 Nov 2021**	**ES2141185**	**Normal**	0.21	0.21	2.15	0.13	5.35	<0.02	<0.1	0.11	0.53	0.07	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_220307	**07 Mar 2022**	**ES2208419**	**Normal**	0.15	0.17	1.59	0.1	4	<0.02	<0.1	0.08	0.4	0.04	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC200_220307	**07 Mar 2022**	**RN1346368**	**Interlab_D**	0.14	0.14	0.98	0.088	2.7	<0.01	0.052	0.082	0.31	0.045	0.09	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_220307	**07 Mar 2022**	**ES2208419**	**Field_D**	0.16	0.17	1.57	0.1	4.09	<0.02	<0.1	0.09	0.4	0.04	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_221010	**10 Oct 2022**	**ES2236478**	**Normal**	0.24	0.27	2.63	0.16	6.48	<0.02	<0.1	0.14	0.56	0.08	0.19	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_230323	**23 Mar 2023**	**ES2310999**	**Normal**	0.11	0.13	1.29	0.1	4.23	<0.02	<0.1	0.1	0.28	0.04	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_231109	**09 Nov 2023**	**ES2338712**	**Normal**	0.11	0.12	1.3	0.08	3.26	<0.02	<0.1	0.24	0.41	0.06	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC100_231109	**09 Nov 2023**	**ES2338712**	**Field_D**	0.12	0.12	1.35	0.08	3.36	<0.02	<0.1	0.24	0.43	0.06	0.11	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_240304	**04 Mar 2024**	**ES2407635**	**Normal**	0.14	0.16	1.56	0.11	3.17	<0.02	<0.1	0.18	0.4	0.06	0.11	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW128_240320	**20 Mar 2024**	**1080327**	**Normal**	0.11	0.1	1.1	0.06	2.3	<0.01	0.09	0.32	0.41	0.07	0.09	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC104_240320	**20 Mar 2024**	**1080327**	**Field_D**	0.1	0.1	1.1	0.09	3.7	<0.01	0.09	0.3	0.41	0.07	0.09	<0.01	<0.01	<0.01	<0.01	<0.01
FFF1	**MW215**	**1302_MW125_170724**	**24 Jul 2017**	**555927**	**Normal**	<0.01	<0.01	0.06	<0.01	0.04	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC1GW_170724	**24 Jul 2017**	**555927**	**Field_D**	<0.01	<0.01	0.06	<0.01	0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW125_170901	**01 Sep 2017**	**561891**	**Normal**	<0.01	<0.01	0.07	<0.01	0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		QCMW22_180115	**12 Jan 2018**	**EB1801996**	**Interlab_D**	<0.02	<0.02	0.05	<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
		1302_MW125_180115	**15 Jan 2018**	**580450**	**Normal**	<0.01	<0.01	0.08	<0.01	0.25	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QCMW21_180115	**15 Jan 2018**	**580450**	**Field_D**	<0.01	<0.01	0.04	<0.01	0.12	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW125_180308	**08 Mar 2018**	**588759**	**Normal**	0.03	0.04	0.33	0.02	0.55	<0.01	<0.05	0.01	0.06	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW215_191216	**16 Dec 2019**	**ES1942302**	**Normal**	0.13	0.14	1.29	0.1	2.55	<0.02	<0.1	0.1	0.24	0.05	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW215_200414	**16 Apr 2020**	**ES2012928**	**Normal**	0.22	0.22	2.68	0.18	4.75	<0.02	<0.1	0.12	0.43	0.08	0.11	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW215_201103	**03 Nov 2020**	**ES2039162**	**Normal**	0.24	0.28	2.62	0.19	5.2	<0.02	<0.1	0.16	0.47	0.09	0.13	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW215_210506	**06 May 2021**	**ES2117036**	**Normal**	0.2	0.27	2.26	0.22	5.52	<0.02	<0.1	0.12	0.34	0.08	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW215_211111	**11 Nov 2021**	**ES2141185**	**Normal**	0.19	0.17	1.81	0.14	5.45	<0.02	<0.1	0.11	0.39	0.06	0.11	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW215_220929	**29 Sep 2022**	**ES2235227**	**Normal**	0.18	0.2	1.77	0.14	4.2	<0.02	<0.1	0.09	0.35	0.06	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW215_230323	**23 Mar 2023**	**ES2310999**	**Normal**	0.2	0.28	3.02	0.24	6.3	<0.02	0.2	0.75	0.74	0.12	0.15	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW215_231030	**30 Oct 2023**	**ES2337724**	**Normal**	0.11	0.12	1.19	0.1	3.4	<0.02	0.1	0.5	0.51	0.1	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW215_240305	**05 Mar 2024**	**ES2407635**	**Normal**	0.14	0.14	1.42	0.11	2.96	<0.02	0.2	0.84	0.69	0.13	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
FFF4 & FFF6	**MW133**	**1302_MW133_170807**	**07 Aug 2017**	**558368**	**Normal**	1	1.3	10	1.3	62	<0.01	0.29	0.76	3.8	0.35	0.94	0.02	<0.01	<0.01	<0.01	<0.01
		1302_MW133_170828	**28 Aug 2017**	**561086**	**Normal**	0.93	1.1	9	1.1	51	<0.01	0.25	0.56	3.2	0.29	0.74	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW133_171115	**15 Nov 2017**	**573035**	**Normal**	0.63	0.85	8.4	0.91	53	<0.01	0.18	0.4	3.2	0.26	0.72	0.02	<0.01	<0.01	<0.01	<0.01
		1302_MW133_180112	**12 Jan 2018**	**580464**	**Normal**	0.35	0.55	6.8	0.66	45	<0.01	0.19	0.63	3	0.27	0.56	0.02	<0.01	<0.01	<0.01	<0.01
		QCMW16_180112	**12 Jan 2018**	**EB1801996**	**Interlab_D**	0.44	0.55	7.32	0.77	38.4	<0.02	0.2	0.54	2.74	0.28	0.65	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCMW15_180112	**12 Jan 2018**	**580464**	**Field_D**	0.34	0.55	7.3	0.64	47	<0.01	0.2	0.59	3	0.28	0.59	0.02	0.01	<0.01	<0.01	<0.01
		1302_MW133_180307	**07 Mar 2018**	**588753**	**Normal**	1.1	1.5	13	1.6	99	<0.01	0.32	0.72	4.4	0.44	1.2	0.03	<0.01	<0.01	<0.01	<0.01
		1302_MW133_8_180508	**08 May 2018**	**598367**	**Normal**	0.38	0.77	4.8	0.59	29	0.02	0.12	0.25	1.7	0.15	0.45	0.02	0.01	<0.01	<0.01	<0.01
		1302_MW133_181213	**13 Dec 2018**	**633394**	**Normal**	0.66	1.1	13	2.1	68	0.04	0.29	0.79	13	0.47	1.3	0.03	0.02	<0.01	<0.01	<0.01
		1302_QCMW4_181213	**13 Dec 2018**	**EB1831109**	**Interlab_D**	0.64	0.83	10.1	1.06	47.2	<0.02	0.2	0.52	2.98	0.33	0.81	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCMW3_181213	**13 Dec 2018**	**633394**	**Field_D**	0.87	2.5	13	1.1	120	0.73	0.3	0.81	4.5	0.48	1.4	0.03	0.02	<0.01	<0.01	<0.01
		1302_MW133_190320	**20 Mar 2019**	**646323**	**Normal**	0.54	0.91	5.8	1.1	34	0.03	0.18	0.33	2	0.2	0.53	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW133_210506	**06 May 2021**	**ES2117036**	**Normal**	0.31	0.39	3.33	0.35	11.5	0.04	<0.1	0.19	1.09	0.11	0.27	<0.02	<0.02	<0.02	<0.02	<0.02

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_MW133_211111	11 Nov 2021	ES2141185	Normal	0.62	0.64	7.16	0.74	28.5	0.03	0.1	0.39	3.02	0.22	0.54	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW133_220308	08 Mar 2022	ES2208419	Normal	0.5	0.66	6.32	0.7	30.4	0.05	0.1	0.32	2.35	0.2	0.53	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW133_221021	21 Oct 2022	ES2238035	Normal	0.62	0.88	8.84	0.96	47.2	0.03	0.2	0.49	2.79	0.31	0.8	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW133_230315	15 Mar 2023	ES2310999	Normal	0.45	0.73	6.98	0.92	30.4	0.1	0.2	0.39	1.92	0.21	0.56	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW133_231031	31 Oct 2023	ES2337724	Normal	0.43	0.48	5.39	0.66	31.6	<0.05	<0.2	0.32	1.93	0.17	0.5	<0.05	<0.05	<0.05	<0.05	<0.05
		1302_MW133_240304	04 Mar 2024	ES2407635	Normal	0.44	0.68	6.1	1.19	37.4	0.08	0.1	0.38	2.19	0.22	0.66	<0.02	<0.02	<0.02	<0.02	<0.02
	MW292	1302_205_MW04_170427	27 Apr 2017	544555	Normal	1	0.96	12	1.6	85	<0.3	<0.3	0.76	4.7	0.43	1.3	<0.3	<0.3	<0.3	<0.3	<0.3
		1302_DUP02A_170427	27 Apr 2017	EB1708998	Interlab_D	0.93	1.16	8.76	1.66	67	<0.02	<0.1	0.57	5.88	0.28	1.12	0.02	<0.02	<0.02	<0.02	<0.02
		1302_DUP02_GW_170427	27 Apr 2017	544555	Field_D	0.98	0.94	12	1.4	76	<0.3	<0.3	0.7	4.4	0.4	1.2	<0.3	<0.3	<0.3	<0.3	<0.3
		1302_MW292_200414	16 Apr 2020	ES2012928	Normal	0.81	0.78	10.4	1.78	47.6	0.02	0.1	0.59	3.67	0.33	0.89	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW292_201104	04 Nov 2020	ES2039162	Normal	0.84	1.12	9.87	1.09	49	0.1	<0.1	0.35	3.5	0.33	0.87	<0.02	<0.02	<0.02	<0.02	<0.02
	MW302	1302_207_MW05_170427	27 Apr 2017	544555	Normal	3.6	3.3	28	1.5	44	<0.3	0.61	1	6.3	0.79	1.8	<0.3	<0.3	<0.3	<0.3	<0.3
		1302_207_MW05_170904	04 Sep 2017	562043	Normal	3.7	6.2	41	1.9	63	<0.01	0.77	1.6	7.8	0.98	2.3	0.02	<0.01	<0.01	<0.01	<0.01
		1302_QC33MW_170904	04 Sep 2017	562043	Field_D	4	7.8	41	2	58	<0.01	0.89	2	8.6	1.1	2.6	0.02	<0.01	<0.01	<0.01	<0.01
		1302_207_MW05_171115	15 Nov 2017	573035	Normal	5.6	4.7	37	2.2	71	<0.01	0.91	1.4	9	1	2.4	0.02	<0.01	<0.01	<0.01	<0.01
		1302_207_MW05_180112	12 Jan 2018	580464	Normal	3.3	3.4	29	1.3	35	<0.01	0.78	1.6	7.4	0.94	1.9	0.02	<0.01	<0.01	<0.01	<0.01
		1302_207_MW05_180309	08 Mar 2018	588949	Normal	3.2	5.8	29	4.7	51	0.04	0.66	1.4	8.4	0.69	1.7	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW302_200529	29 May 2020	ES2018941	Normal	3.48	5.01	22.2	2.49	38.8	<0.02	0.2	1.3	6.18	0.85	1.84	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC100_200529	29 May 2020	ES2018941	Field_D	3.22	4.73	19.8	2.35	33.8	<0.02	0.2	1.23	5	0.81	1.82	<0.02	<0.02	<0.02	<0.02	<0.02
	MW303	1302_207_MW04_170905	05 Sep 2017	562268	Normal	6.1	4.2	51	2.7	57	<0.01	1.4	2.3	11	1.6	3.7	0.03	<0.01	<0.01	<0.01	<0.01
		1302_QC36MW_170905	05 Sep 2017	562268	Field_D	6.4	4.2	51	2.7	56	<0.01	1.5	2.4	11	1.8	3.8	0.03	<0.01	<0.01	<0.01	<0.01
		1302_207_MW04A_180125	25 Jan 2018	583667	Normal	1.9	2.4	19	1.1	30	<0.01	0.54	0.88	4.2	0.52	1.2	0.01	<0.01	<0.01	<0.01	<0.01
		1302_207_MW04_181213	13 Dec 2018	633394	Normal	6.4	6.4	48	2.5	81	0.07	1.2	2	10	1.6	3.3	0.02	<0.01	<0.01	<0.01	<0.01
		1302_207_MW04_190320	20 Mar 2019	646323	Normal	1.9	1.8	13	0.87	19	<0.01	0.53	0.67	3.5	0.43	0.87	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW303_200414	16 Apr 2020	ES2012928	Normal	2.67	2.46	19	1.55	27.7	<0.02	0.6	0.84	4.99	0.56	1.22	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW303_201103	03 Nov 2020	ES2039162	Normal	5.84	7.24	46.1	3.48	84.8	<0.02	1	1.86	12.2	1.52	3.12	0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC203_201103	03 Nov 2020	RN1294219	Interlab_D	3.3	3.2	25	1.8	31	<0.01	1	1.3	6.1	0.84	1.8	0.011	<0.01	<0.01	<0.01	<0.02
		1302_QC103_201103	03 Nov 2020	ES2039162	Field_D	5.89	6.99	44	3.38	77	<0.02	1.2	1.88	11.8	1.55	3.39	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW303_210429	29 Apr 2021	ES2116496	Normal	2.95	4.54	30	2.13	21.8	<0.02	1	1.24	8	0.78	1.39	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC103_210429	29 Apr 2021	ES2116496	Field_D	2.89	4.57	35.2	2.23	26.2	<0.02	1	1.22	9.45	0.76	1.42	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC203_210429	29 Apr 2021	ES2116496	Field_D	2.8	4.44	35.5	2.2	29.2	<0.02	0.9	1.18	9.44	0.74	1.44	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW303_211109	09 Nov 2021	ES2141185	Normal	6.58	7.08	41.3	2.04	54.3	0.02	1.1	1.98	14.5	1.55	3.34	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW303_220308	08 Mar 2022	ES2208419	Normal	1.62	2.1	13	1.05	18.8	<0.02	0.3	0.53	3.54	0.35	0.77	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC101_220308	08 Mar 2022	ES2208419	Field_D	1.99	2.54	13.8	1.24	19.1	<0.02	0.4	0.63	4.11	0.39	0.84	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW303_220929	29 Sep 2022	ES2235227	Normal	5.45	7.69	31.4	2.64	49.9	<0.02	1.1	1.63	11.4	1.39	3	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW303_230322	22 Mar 2023	ES2310999	Normal	3.01	4.16	28.1	2.05	26.8	<0.02	0.7	1.32	8.26	0.85	1.8	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW303_231030	30 Oct 2023	ES2337724	Normal	4.72	4.98	33.6	2.62	60.1	<0.05	1.1	1.56	9.06	1.2	2.78	<0.05	<0.05	<0.05	<0.05	<0.05
		1302_MW303_240305	05 Mar 2024	ES2407635	Normal	2.11	2.77	19.2	1.47	19	<0.02	0.6	0.98	5.66	0.58	1.23	<0.02	<0.02	<0.02	<0.02	<0.02
North of FFF4 & FFF6	MW205	1302_MW205_171113	13 Nov 2017	572745	Normal	0.05	0.06	0.51	0.02	0.61	<0.01	<0.05	<0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW205_180112	12 Jan 2018	580464	Normal	0.25	0.35	2.4	0.12	3.7	<0.01	<0.05	0.08	0.33	0.05	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW205_180306	06 Mar 2018	588389	Normal	0.18	0.21	1.2	0.12	3.7	<0.01	<0.05	0.06	0.27	0.04	0.09	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW205_181215	15 Dec 2018	633343	Normal	0.25	0.29	2.8	0.26	6.2	<0.01	<0.05	0.1	0.45	0.06	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW205_190320	20 Mar 2019	646323	Normal	0.26	0.28	1.7	0.14	3.3	<0.01	<0.05	0.08	0.34	0.05	0.09	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW205a_191217	17 Dec 2019	ES1942302	Normal	0.19	0.17	1.69	0.13	4.14	<0.02	<0.1	0.06	0.27	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_191217	17 Dec 2019	ES1942302	Normal	0.04	0.04	0.37	0.02	0.62	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC101_191217	17 Dec 2019	ES1942302	Field_D	0.04	0.04	0.39	0.02	0.66	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC104_191217	17 Dec 2019	ES1942302	Field_D	0.04	0.05	0.41	0.02	0.66	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_200414	16 Apr 2020	ES2012928	Normal	0.02	0.02	0.26	<0.02	0.39	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC200_200414	16 Apr 2020	RN1271840	Interlab_D	0.024	0.026	0.29	<0.01	0.41	<0.01	<0.05	<0.02	0.029	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_200414	16 Apr 2020	ES2012928	Field_D	0.02	<0.02	0.26	<0.02	0.39	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_201103	03 Nov 2020	ES2039162	Normal	0.05	0.06	0.6	0.03	1.07	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_210429	29 Apr 2021	ES2116496	Normal	0.03	0.04	0.4	0.02	0.51	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_211110	10 Nov 2021	ES2141185	Normal	0.26	0.31	2.24	0.15	4.64	<0.02	<0.1	0.06	0.42	0.05	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_220310	10 Mar 2022	ES2208419	Normal	0.26	0.23	1.56	0.1	2.45	<0.02	<0.1	0.07	0.4	0.05	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_220928	28 Sep 2022	ES2235227	Normal	0.04	0.06	0.54	0.03	0.91	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_230314	14 Mar 2023	ES2310999	Normal	0.16	0.16	1.2	0.07	1.84	<0.02	<0.1	0.05	0.24	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_231031	31 Oct 2023	ES2337724	Normal	0.23	0.26	2.05	0.14	3.88	<0.02	<0.1	0.06	0.3	0.04	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW205_240320	20 Mar 2024	ES2409473	Normal	0.06	0.06	0.47	0.03	0.92	<0.02	<0.1	<0.02	0.09	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1302	MW297	1302_206_MW05_170901	01 Sep 2017	561531	Normal	0.79	0.65	5	0.51	23	0.03	0.18	0.25	1.6	0.22	0.53	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC25MW_170901	01 Sep 2017	EM1712005	Interlab_D	0.59	0.45	3.46	0.34	12.9	<0.02	<0.1	0.14	0.9	0.13	0.34	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_206_MW05_190320	20 Mar 2019	646323	Normal	0.14	0.12	1.1	0.09	4.7	0.01	0.06	0.07	0.32	0.05	0.11	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW297_191216	17 Dec 2019	ES1942302	Normal	2.08	2.75	18.1	2.23	58.2	0.05	0.4	0.74	4.29	0.67	1.31	<0.02	<0.02	<0.02	<0.02	<0.02

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_MW297_200414	16 Apr 2020	ES2012928	Normal	0.24	0.17	1.8	0.18	7.98	<0.02	<0.1	0.07	0.51	0.07	0.15	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW297_201104	02 Nov 2020	ES2039162	Normal	0.48	0.68	5.03	0.5	25.6	0.06	0.1	0.14	1.16	0.2	0.49	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW297_210429	29 Apr 2021	ES2116496	Normal	0.08	0.09	0.8	0.05	2.8	0.03	<0.1	0.04	0.22	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW297_211111	11 Nov 2021	ES2141185	Normal	1.18	0.9	9.76	1.18	28.3	0.06	<0.1	0.52	3.71	0.45	1.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW297_220308	08 Mar 2022	ES2208419	Normal	0.03	0.04	0.37	<0.02	1.07	<0.02	<0.1	<0.02	0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW297_220929	29 Sep 2022	ES2235227	Normal	0.92	1.08	6.62	0.82	35.2	0.07	0.2	0.29	2.16	0.34	0.75	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW297_230314	14 Mar 2023	ES2310999	Normal	0.05	0.07	0.7	0.03	1.32	<0.02	<0.1	0.03	0.16	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW297_231031	30 Oct 2023	ES2337724	Normal	0.74	0.76	6.08	0.73	32.9	<0.05	<0.2	0.28	1.61	0.27	0.66	<0.05	<0.05	<0.05	<0.05	<0.05
		1302_MW297_240304	04 Mar 2024	ES2407635	Normal	0.02	0.03	0.36	<0.02	1.06	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
North of FFF5	MW112	1302_MW112_170803	03 Aug 2017	557384	Normal	0.61	0.59	4.5	0.37	20	0.02	0.16	0.25	1.4	0.16	0.33	0.01	<0.01	<0.01	<0.01	<0.01
		1302_QCGW2_170803	03 Aug 2017	EM1710451	Interlab_D	0.3	0.33	3.04	0.26	8.82	<0.02	<0.1	0.13	0.66	0.1	0.21	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW112_170824	24 Aug 2017	560518	Normal	0.52	0.55	5.7	0.26	15	<0.01	0.14	0.28	1.3	0.14	0.29	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW112_171113	13 Nov 2017	572745	Normal	0.46	0.58	5.9	0.24	14	<0.01	0.13	0.28	1.3	0.2	0.34	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW112_180112	12 Jan 2018	580464	Normal	0.43	0.49	3.4	0.27	15	<0.01	0.12	0.18	1	0.12	0.25	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW112_180306	06 Mar 2018	588389	Normal	0.35	0.39	2.7	0.36	7.8	0.03	0.09	0.14	0.88	0.09	0.19	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW112_181215	15 Dec 2018	633343	Normal	0.49	0.41	5.5	0.69	23	0.02	0.16	0.24	1.4	0.18	0.31	<0.01	<0.01	<0.01	0.01	0.02
		1302_MW112_190320	20 Mar 2019	646323	Normal	0.27	0.25	1.9	0.18	6.6	<0.01	0.09	0.11	0.57	0.07	0.13	<0.01	<0.01	<0.01	<0.01	<0.01
		QCGW03	20 Mar 2019	EB1907348	Interlab_D	0.22	0.22	2.08	0.15	7.84	<0.02	<0.1	0.09	0.58	0.07	0.15	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCGW02_190320	20 Mar 2019	646323	Field_D	0.28	0.26	2	0.18	7	<0.01	0.09	0.12	0.59	0.07	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW112_191217	17 Dec 2019	ES1942302	Normal	0.51	0.42	3.89	0.35	13.7	<0.02	0.1	0.21	1.18	0.14	0.28	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC102_191217	17 Dec 2019	ES1942302	Field_D	0.54	0.43	3.92	0.36	15.7	<0.02	0.1	0.21	1.16	0.14	0.27	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW112_200414	16 Apr 2020	ES2012928	Normal	0.58	0.43	4.28	0.39	12.8	<0.02	0.1	0.2	1.37	0.14	0.32	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW112_201103	03 Nov 2020	ES2039162	Normal	0.46	0.56	4.24	0.36	16.1	0.02	0.1	0.19	1.05	0.13	0.31	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC202_201103	03 Nov 2020	RN1294219	Interlab_D	0.33	0.3	2.5	0.16	8	<0.01	0.091	0.13	0.75	0.085	0.17	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC102_201103	03 Nov 2020	ES2039162	Field_D	0.48	0.52	3.89	0.34	16	0.03	0.1	0.18	1.05	0.13	0.3	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW112_210428	29 Apr 2021	ES2116496	Normal	0.41	0.44	3.73	0.28	9.18	<0.02	<0.1	0.18	1.04	0.12	0.22	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW112_211110	10 Nov 2021	ES2141185	Normal	0.43	0.55	3.64	0.42	18.2	0.06	<0.1	0.16	1.23	0.13	0.32	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW112_220310	10 Mar 2022	ES2208419	Normal	0.32	0.3	2.26	0.16	6.88	<0.02	<0.1	0.14	0.9	0.06	0.16	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW112_221010	10 Oct 2022	ES2236478	Normal	0.34	0.35	3.13	0.27	14.8	0.03	<0.1	0.16	0.86	0.11	0.29	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC200_221010	10 Oct 2022	RN1369431	Interlab_D	0.18	0.2	1.8	0.13	6.9	<0.01	0.076	0.082	0.47	0.057	0.14	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_221010	10 Oct 2022	ES2236478	Field_D	0.35	0.37	3.18	0.27	14.4	0.04	<0.1	0.17	0.9	0.12	0.25	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW112_230314	14 Mar 2023	ES2310999	Normal	0.23	0.23	1.81	0.12	6.42	<0.02	<0.1	0.11	0.6	0.07	0.15	<0.02	<0.02	<0.02	<0.02	<0.02
FFTA1	MW139	1302_MW139_170724	24 Jul 2017	555927	Normal	0.11	0.13	0.96	0.12	4.1	<0.01	<0.05	0.05	0.19	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW139_170828	28 Aug 2017	561082	Normal	0.15	0.15	1.2	0.14	5.2	<0.01	<0.05	0.05	0.23	0.03	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW139_171115	15 Nov 2017	573035	Normal	0.15	0.15	1.2	0.11	4.5	<0.01	<0.05	0.05	0.23	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW139_180112	12 Jan 2018	580464	Normal	0.03	0.03	0.24	0.02	1.3	<0.01	<0.05	0.02	0.07	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW139_180307	07 Mar 2018	588753	Normal	0.01	0.01	0.13	<0.01	0.43	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW139_181213	13 Dec 2018	633394	Normal	0.07	0.08	0.82	0.08	3.2	<0.01	<0.05	0.04	0.15	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW139_190320	20 Mar 2019	646323	Normal	0.02	0.01	0.17	<0.01	0.42	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW139_191217	17 Dec 2019	ES1942302	Normal	0.07	0.08	0.61	0.05	1.7	<0.02	<0.1	0.02	0.12	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_200414	16 Apr 2020	ES2012928	Normal	<0.02	<0.02	0.2	<0.02	0.51	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_201104	02 Nov 2020	ES2039162	Normal	0.06	0.07	0.62	0.04	1.55	<0.02	<0.1	<0.02	0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_210506	06 May 2021	ES2117036	Normal	<0.02	<0.02	0.22	<0.02	0.44	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_211110	10 Nov 2021	ES2141185	Normal	0.07	0.07	0.56	0.04	1.7	<0.02	<0.1	0.02	0.14	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_220309	09 Mar 2022	ES2208419	Normal	<0.02	<0.02	0.14	<0.02	0.27	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_220929	29 Sep 2022	ES2235227	Normal	0.06	0.07	0.49	0.04	1.45	<0.02	<0.1	0.02	0.12	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_230322	22 Mar 2023	ES2310999	Normal	<0.02	<0.02	0.14	<0.02	0.42	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_231030	30 Oct 2023	ES2337724	Normal	0.05	0.05	0.41	0.03	1.15	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW139_240305	05 Mar 2024	ES2407635	Normal	<0.02	<0.02	0.09	<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
		1302_MW139_240318	18 Mar 2024	1079850	Normal	<0.01	<0.01	0.09	<0.01	0.25	<0.01	<0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW422	1302_MW422_191217	17 Dec 2019	ES1942302	Normal	3.73	4.26	18.2	2.11	41	<0.02	1	1.68	5.42	0.65	1.04	0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW422_200414	16 Apr 2020	ES2012928	Normal	4.34	4.08	30	1.92	51.6	0.03	0.9	1.65	7.68	0.88	1.51	0.03	<0.02	<0.02	<0.02	<0.02
		1302_MW422_201102	02 Nov 2020	ES2039162	Normal	3.35	4.79	23.2	2.16	51.1	<0.02	0.9	1.38	7.16	0.83	1.31	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW422_210506	06 May 2021	ES2117036	Normal	3.48	3.71	26.5	1.99	47.3	0.07	0.9	1.92	8.01	1	2.01	0.04	<0.02	<0.02	<0.02	<0.02
		1302_MW422_211110	10 Nov 2021	ES2141185	Normal	4.44	3.22	27.4	3.43	45.6	0.11	1	1.8	11	0.88	1.56	0.04	<0.02	<0.02	<0.02	<0.02
		1302_MW422_220309	09 Mar 2022	ES2208419	Normal	39.4	33.2	235	9.88	93.3	0.2	6.3	14	71.2	5.65	12.5	0.1	<0.02	<0.02	<0.02	<0.02
	MW502**	1302_MW422_240305	05 Mar 2024	ES2407635	Normal	0.43	0.43	2.68	0.21	4.28	<0.02	0.1	0.18	0.73	0.09	0.16	<0.02	<0.02	<0.02	<0.02	<0.02
CFTA	MW240	1302_243_MW02_170424	24 Apr 2017	543991	Normal	1.3	1.2	6.7	0.4	23	<0.01	1.5	2.2	4.9	3.3	3.7	0.88	0.1	<0.01	<0.01	<0.01
		1302_243_MW02_170822	22 Aug 2017	560107	Normal	2.2	2.2	11	1.3	48	0.05	1.9	2.9	7	4.3	5.5	1	0.11	0.01	<0.01	<0.01
		1302_243_MW02_180112	12 Jan 2018	580464	Normal	2.3	3.2	17	2.5	82	<0.01	2.3	3.9	9.6	6	10	3.1	0.15	<0.01	<0.01	<0.01
		1302_243_MW02A_180131	31 Jan 2018	583667	Normal	7.6	7.8	70	5.1	80	<0.01	5.9	30	29	21	24	3.7	0.36	<0.01	<0.01	<0.01
		1302_243_MW02_180308	08 Mar 2018	588968	Normal	1.6	0.76	10	1.3	29	0.06	2	3.8	7.3	4	5.1	1.1	0.11	<0.01	<0.01	<0.01

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_243_MW02_6_180508	08 May 2018	598367	Normal	0.72	1.2	4	0.3	16	<0.01	1.1	1.6	3.2	2.6	2.8	0.7	0.07	0.01	<0.01	<0.01
		1302_243_MW02_190320	20 Mar 2019	646323	Normal	0.89	1.2	4.3	0.7	18	<0.01	1.4	2	3.5	2.8	3.1	0.84	0.09	<0.01	<0.01	<0.01
		1302_MW240_200414	16 Apr 2020	ES2012928	Normal	1.34	0.91	10.5	0.6	24.6	0.1	1.2	2.2	4.98	3.24	5.05	0.94	0.22	0.12	0.08	0.04
		1302_MW240_201103	03 Nov 2020	ES2039162	Normal	2.01	1.88	12.7	1.65	88.9	0.28	2.5	4.21	10.4	5.48	8.4	1.61	0.19	<0.02	<0.02	<0.02
		1302_MW240_201210	10 Dec 2020	763330	Normal	1.3	1.2	8	0.75	43	0.04	1.9	2.5	7.7	4.2	5.2	0.99	0.14	0.02	<0.01	<0.01
		1302_MW240_210301	01 Mar 2021	778121	Normal	2.2	2	16	1.9	36	<0.01	1.9	6.8	9	9.1	9.9	3.2	0.22	<0.01	<0.01	<0.01
		1302_MW240_210429	29 Apr 2021	ES2116496	Normal	1.42	1.14	11.6	0.94	26.5	0.07	1.8	3.01	8	4.06	4.41	1.23	0.23	0.04	<0.02	<0.02
		1302_MW240_220309	09 Mar 2022	ES2208419	Normal	1.55	1.28	7.34	0.8	19.2	0.06	1.4	2.89	6.79	2.76	3.71	0.89	0.22	<0.02	<0.02	<0.02
		1302_MW240_230323	23 Mar 2023	ES2310999	Normal	1.05	1.15	6.88	0.48	17.8	0.04	1.4	2.18	4.52	2.94	2.85	0.93	0.17	<0.02	<0.02	<0.02
		1302_MW240_240304	04 Mar 2024	ES2407635	Normal	0.75	0.72	5.24	0.46	14.4	0.05	1.2	1.84	3.5	2.22	2.44	0.68	0.15	<0.02	<0.02	<0.02
		1302_MW240_240320	20 Mar 2024	1080327	Normal	1.2	0.88	5.6	0.41	14	<0.01	1.1	1.6	2.7	2.1	2.6	0.9	0.19	<0.01	<0.01	<0.01
	MW241	1302_243_MW03_170424	24 Apr 2017	543991	Normal	0.91	0.82	5.3	0.41	18	<0.01	1.2	2.1	3.6	2.9	3.2	0.66	0.05	<0.01	<0.01	<0.01
		1302_243_MW03_180112	12 Jan 2018	580464	Normal	0.74	0.91	5.5	0.56	23	<0.01	1	1.8	3	2.5	2.9	0.66	0.05	<0.01	<0.01	<0.01
		1302_243_MW03_180308	08 Mar 2018	588968	Normal	0.99	0.61	6.7	0.78	17	<0.01	1.3	3.2	3.8	2.8	3.6	0.68	0.04	<0.01	<0.01	<0.01
		1302_243_MW03_190320	20 Mar 2019	646323	Normal	0.64	0.72	3.4	0.39	8.9	<0.01	1.2	2.1	2.5	2.5	2.5	0.57	0.04	<0.01	<0.01	<0.01
		1302_MW241_200414	16 Apr 2020	ES2012928	Normal	0.43	0.28	2.68	0.23	8.44	<0.02	0.5	0.92	1.9	1.24	1.55	0.34	0.03	<0.02	<0.02	<0.02
		1302_MW241_201103	03 Nov 2020	ES2039162	Normal	0.55	0.72	6.3	0.62	15.7	<0.02	1.1	1.99	2.81	2.28	2.63	0.62	0.04	<0.02	<0.02	<0.02
		1302_MW241_201210	10 Dec 2020	763330	Normal	0.49	0.56	3.4	0.25	9.4	<0.01	0.8	1.1	2	1.8	2	0.33	0.02	<0.01	<0.01	<0.01
		1302_MW241_210302	02 Mar 2021	778121	Normal	0.93	1.3	4.4	0.24	10	<0.01	2.1	5.1	4.5	6.6	3.2	0.63	0.05	<0.01	<0.01	<0.01
		1302_QC101_210302	02 Mar 2021	778121	Field_D	0.93	0.76	7	0.26	15	<0.01	1.7	8.5	4.7	5.6	3.4	0.69	0.05	<0.01	<0.01	<0.01
		1302_MW241_210429	29 Apr 2021	ES2116496	Normal	0.38	0.37	2.94	0.23	6.26	<0.02	0.7	3.79	2.34	2.31	1.62	0.45	0.04	<0.02	<0.02	<0.02
		1302_MW241_220309	09 Mar 2022	ES2208419	Normal	1.21	0.8	6.3	0.69	19	<0.02	1.2	2.47	5.59	2.3	3.1	0.8	0.09	<0.02	<0.02	<0.02
		1302_QC201_220309	09 Mar 2022	RN1346368	Interlab_D	0.65	0.94	3.9	0.49	12	<0.01	0.9	1.3	2.4	1.8	1.7	0.77	0.098	<0.01	<0.01	<0.02
		1302_QC102_220309	09 Mar 2022	ES2208419	Field_D	1.24	0.8	6.26	0.66	18.3	<0.02	1.2	2.47	5.53	2.36	3.07	0.77	0.08	<0.02	<0.02	<0.02
		1302_MW241_230323	23 Mar 2023	ES2310999	Normal	0.81	0.6	5.4	0.43	21.6	<0.02	1.2	2.32	3.52	3.46	2.7	0.86	0.1	<0.02	<0.02	<0.02
		1302_MW241_240305	05 Mar 2024	ES2407635	Normal	0.72	0.6	4.36	0.41	15.2	<0.02	0.9	1.51	2.78	2	2.23	0.59	0.07	<0.02	<0.02	<0.02
On-Base - West	MW451	1302_MW451_201210	10 Dec 2020	763330	Normal	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW451_4.5_210301	01 Mar 2021	778121	Normal	0.07	0.08	0.9	0.06	2.6	<0.01	<0.05	0.03	0.12	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC202_210301	01 Mar 2021	EM2103767	Interlab_D	<0.02	<0.02	0.75	0.04	1.31	<0.02	<0.10	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW451_220308	08 Mar 2022	ES2208419	Normal	<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
		1302_MW451_220928	28 Sep 2022	ES2235227	Normal	<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
		1302_MW451_230323	23 Mar 2023	ES2310999	Normal	0.06	0.08	0.84	0.05	1.54	<0.02	<0.1	0.03	0.09	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW451_231030	30 Oct 2023	ES2337724	Normal	<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
		1302_MW451_240305	05 Mar 2024	ES2407635	Normal	<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
	MW452	1302_MW452_201210	10 Dec 2020	763330	Normal	0.1	0.11	1.3	0.07	3.5	<0.01	<0.05	0.04	0.16	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW452_3.0_210301	01 Mar 2021	778121	Normal	0.08	0.11	1.1	0.06	3.2	<0.01	<0.05	0.05	0.17	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC102_210301	01 Mar 2021	778121	Field_D	0.09	0.13	1.3	0.07	3.3	<0.01	<0.05	0.05	0.18	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW452_220308	08 Mar 2022	ES2208419	Normal	0.07	0.09	0.89	0.05	1.86	<0.02	<0.1	0.02	0.15	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW452_220928	28 Sep 2022	ES2235227	Normal	0.08	0.12	1.61	0.08	2.72	<0.02	<0.1	0.03	0.14	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC102_220928	28 Sep 2022	ES2235227	Field_D	0.12	0.19	2.41	0.11	3.25	<0.02	<0.1	0.04	0.19	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW452_230323	23 Mar 2023	ES2310999	Normal	0.13	0.19	1.83	0.11	2.91	<0.02	<0.1	0.23	0.39	0.08	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW452_231030	30 Oct 2023	ES2337724	Normal	0.09	0.13	1.2	0.07	2.56	<0.02	<0.1	0.08	0.19	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW452_240305	05 Mar 2024	ES2407635	Normal	0.08	0.14	1.2	0.08	1.74	<0.02	<0.1	0.18	0.28	0.05	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW452_240318	18 Mar 2024	1079850	Normal	0.05	0.08	0.65	0.04	1.3	<0.01	<0.05	0.11	0.18	0.04	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
	MW405	1031MWBLD33-SOUTH_170824	24 Aug 2017	560518	Normal	0.21	0.22	2.7	0.15	6.6	<0.01	0.07	0.23	0.42	0.09	0.11	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_BLD33-STH_171113	13 Nov 2017	572745	Normal	0.11	0.16	1.7	0.09	4.5	<0.01	0.07	0.23	0.31	0.12	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_BLD33-STH_180112	12 Jan 2018	580464	Normal	0.45	0.59	6.2	0.53	36	<0.01	0.14	0.34	0.99	0.22	0.35	0.01	<0.01	<0.01	<0.01	<0.01
		1301_BLD33_SOUTGA_180202	02 Feb 2018	583667	Normal	0.38	0.44	5.1	0.75	12	<0.01	0.09	0.16	0.8	0.13	0.29	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_BLD33_STH_180306	06 Mar 2018	588389	Normal	0.06	0.07	0.63	0.05	1.4	0.01	<0.05	0.02	0.1	0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_BLD33_STH_181215	15 Dec 2018	633343	Normal	0.22	0.26	2.7	0.4	8.1	<0.01	0.1	0.26	0.54	0.13	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_BLD33_SOUTH_190320	20 Mar 2019	646323	Normal	0.84	1.3	6.7	0.62	28	<0.01	0.2	0.28	1.2	0.21	0.36	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QCMW24_180202	02 Feb 2018	EB1803787	Interlab_D	0.41	0.34	4.24	0.32	16.4	<0.02	0.1	0.16	0.71	0.14	0.26	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW405_191217	17 Dec 2019	ES1942302	Normal	0.11	0.1	1.24	0.11	3.48	<0.02	<0.1	0.2	0.29	0.08	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW405_200414	16 Apr 2020	ES2012928	Normal	0.76	0.66	6.07	0.56	16.7	<0.02	0.1	0.25	1.11	0.17	0.33	<0.02	<0.02	<0.02	<0.02	<0.02
On-Base - North west	MW453	1302_MW453_201210	10 Dec 2020	763330	Normal	0.02	0.02	0.1	<0.01	0.22	<0.01	<0.05	<0.01	0.04	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW453_210301	01 Mar 2021	778121	Normal	0.42	0.53	3.5	0.1	0.95	<0.01	0.65	0.87	1.8	1.5	1.9	0.12	<0.01	<0.01	<0.01	<0.01
		1302_MW453_220309	09 Mar 2022	ES2208419	Normal	1.09	0.9	4.52	0.28	3.66	<0.02	1	2.05	4.97	1.93	2.34	0.24	<0.02	<0.02	<0.02	<0.02
		1302_MW453_230323	23 Mar 2023	ES2310999	Normal	1.35	1.37	7.35	0.37	5.26	<0.02	1.7	2.75	6.07	4.07	3.42	0.35	<0.02	<0.02	<0.02	<0.02
		1302_MW453_240319	19 Mar 2024	ES2409473	Normal	0.91	0.88	4.75	0.26	5.47	<0.02	1.3	1.86	4.3	2.64	2.5	0.32	<0.02	<0.02	<0.02	<0.02
		1302_MW453_240320	20 Mar 2024	1080327	Normal	0.8	0.9	3.9	0.18	4	<0.01	1.1	1.6	3.2	2.1	2.3	0.24	<0.01	<0.01	<0.01	<0.01
		1302_QC105_240320	20 Mar 2024	1080327	Field_D	0.8	0.79	3.7	0.24	3.5	<0.01	1.1	1.5	3.1	2.1	2.1	0.23	<0.01	<0.01	<0.01	<0.01
On-Base - South east	MW454	1302_MW454_201210	10 Dec 2020	763330	Normal	1.9	2.2	18	1	30	<0.01	0.38	0.65	3.5	0.36	0.9	<0.01	<0.01	<0.01	<0.01	<0.01

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_MW454_2.6_210226	26 Feb 2021	778121	Normal	2.2	2.8	22	1.4	62	<0.01	0.33	0.45	2.6	0.27	0.57	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC103_210226	26 Feb 2021	778121	Field_D	<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
		1302_MW454_220309	09 Mar 2022	ES2208419	Normal	2.27	2.76	14.2	1.45	22	<0.02	0.3	0.74	4	0.26	0.64	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW454_220929	29 Sep 2022	ES2235227	Normal	2.43	2.75	15.2	1.13	28	<0.02	0.4	0.66	3.86	0.42	0.81	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW454_230322	22 Mar 2023	ES2310999	Normal	1.31	1.84	12.6	1.18	28.2	<0.02	0.3	0.5	2.15	0.23	0.57	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC202_230322	22 Mar 2023	RN1389152	Interlab_D	1	1.1	8.2	0.48	14	<0.01	0.23	0.36	1.6	0.18	0.36	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC102_230322	22 Mar 2023	ES2310999	Field_D	1.35	1.84	12.9	1.28	28	<0.02	0.3	0.53	2.23	0.25	0.59	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW454_231031	31 Oct 2023	ES2337724	Normal	1.72	1.79	12.2	0.92	26.1	<0.05	0.4	0.63	2.94	0.34	0.66	<0.05	<0.05	<0.05	<0.05	<0.05
		1302_MW454_240305	05 Mar 2024	ES2407635	Normal	1.24	1.63	10.9	0.69	16.5	<0.02	0.2	0.46	2.1	0.23	0.5	<0.02	<0.02	<0.02	<0.02	<0.02
Southern boundary of Base	MW141	1302_MW141_170724	24 Jul 2017	555927	Normal	<0.01	0.01	0.13	<0.01	0.16	<0.01	<0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW141_170828	28 Aug 2017	561082	Normal	<0.01	0.01	0.13	<0.01	0.14	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW141_180307	07 Mar 2018	588753	Normal	<0.01	<0.01	0.12	<0.01	0.11	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW141_181213	13 Dec 2018	633394	Normal	<0.01	0.01	0.21	0.01	0.19	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW141_190320	20 Mar 2019	646323	Normal	<0.01	<0.01	0.12	<0.01	0.15	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW141_191217	19 Dec 2019	ES1942302	Normal	<0.02	<0.02	0.14	<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
		1302_MW141_200414	16 Apr 2020	ES2012928	Normal	<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
		1302_MW141_201102	02 Nov 2020	ES2039162	Normal	<0.02	<0.02	0.19	<0.02	0.26	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW141_210506	06 May 2021	ES2117036	Normal	<0.02	<0.02	0.19	<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
		1302_MW141_211110	10 Nov 2021	ES2141185	Normal	<0.02	<0.02	0.16	<0.02	0.16	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW141_220309	09 Mar 2022	ES2208419	Normal	<0.02	<0.02	0.16	<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
		1302_QC103_220309	09 Mar 2022	ES2208419	Field_D	<0.02	<0.02	0.18	<0.02	0.15	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW141_220929	29 Sep 2022	ES2235227	Normal	<0.02	<0.02	0.15	<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
		1302_MW141_230322	22 Mar 2023	ES2310999	Normal	<0.02	<0.02	0.2	<0.02	0.25	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW141_231030	30 Oct 2023	ES2337724	Normal	<0.02	<0.02	0.15	<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
		1302_MW141_240305	05 Mar 2024	ES2407635	Normal	<0.02	<0.02	0.15	<0.02	0.15	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW141_240318	18 Mar 2024	1079850	Normal	<0.01	0.01	0.14	<0.01	0.14	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW144	1302_MW144_170724	24 Jul 2017	555927	Normal	0.18	0.2	1.5	0.11	3.4	<0.01	<0.05	0.06	0.29	0.03	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW144A_170815	15 Aug 2017	558955	Normal	0.23	0.26	1.9	0.14	3.6	<0.01	<0.05	0.06	0.33	0.04	0.09	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW144_170828	28 Aug 2017	561082	Normal	0.2	0.22	1.7	0.11	3.5	<0.01	<0.05	0.05	0.29	0.03	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW144_171115	15 Nov 2017	573035	Normal	0.21	0.22	1.8	0.1	3.6	<0.01	<0.05	0.05	0.3	0.03	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW144_180111	11 Jan 2018	580283	Normal	0.18	0.2	1.5	0.08	3.4	<0.01	<0.05	0.05	0.26	0.03	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW144_180307	07 Mar 2018	588753	Normal	0.13	0.11	0.95	0.05	1.6	<0.01	<0.05	0.02	0.11	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW144_181213	13 Dec 2018	633394	Normal	0.23	0.31	2.3	0.09	5.6	<0.01	<0.05	0.08	0.38	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW144_190320	20 Mar 2019	646323	Normal	0.16	0.14	1.1	0.08	1.7	<0.01	<0.05	0.03	0.16	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW144_191216	16 Dec 2019	ES1942302	Normal	0.17	0.19	1.56	0.1	3.24	<0.02	<0.1	0.06	0.29	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_200414	16 Apr 2020	ES2012928	Normal	0.15	0.1	1.08	0.06	1.67	<0.02	<0.1	0.03	0.19	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_201103	03 Nov 2020	ES2039162	Normal	0.21	0.25	2	0.13	4.87	<0.02	<0.1	0.07	0.36	0.04	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_210429	29 Apr 2021	ES2116496	Normal	0.14	0.15	1.3	0.08	2.39	<0.02	<0.1	0.05	0.19	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_211110	09 Nov 2021	ES2141185	Normal	0.21	0.21	1.73	0.12	3.98	<0.02	<0.1	0.06	0.39	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC201_211110	10 Nov 2021	RN1334898	Interlab_D	0.17	0.16	1.5	0.071	2.8	<0.01	<0.05	0.055	0.25	0.028	0.068	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC101_211110	10 Nov 2021	ES2141185	Field_D	0.22	0.25	1.82	0.12	3.42	<0.02	<0.1	0.05	0.39	0.04	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_220309	09 Mar 2022	ES2208419	Normal	0.14	0.13	0.99	0.06	1.16	<0.02	<0.1	0.02	0.16	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_220929	28 Sep 2022	ES2235227	Normal	0.19	0.19	1.43	0.1	3.12	<0.02	<0.1	0.05	0.27	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC201_220929	29 Sep 2022	RN1368680	Interlab_D	0.13	0.14	1.3	0.063	2.2	<0.01	<0.05	0.038	0.19	0.02	0.052	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC101_220929	29 Sep 2022	ES2235227	Field_D	0.21	0.21	1.58	0.1	3.04	<0.02	<0.1	0.05	0.32	0.03	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_230420	20 Apr 2023	ES2312996	Normal	0.2	0.21	1.62	0.1	2.13	<0.02	<0.1	0.04	0.23	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC200_230420	20 Apr 2023	RN1391071	Interlab_D	0.11	0.11	0.89	0.033	0.83	<0.01	<0.05	0.023	0.12	0.012	0.026	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_230120	20 Apr 2023	ES2312996	Field_D	0.19	0.21	1.61	0.1	1.98	<0.02	<0.1	0.04	0.22	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_231030	30 Oct 2023	ES2337724	Normal	0.18	0.19	1.52	0.11	3.08	<0.02	<0.1	0.04	0.24	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC200_231030	30 Oct 2023	RN1410783	Interlab_D	0.17	0.15	1.4	0.052	1.7	<0.01	<0.05	0.045	0.24	0.025	0.052	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_231030	30 Oct 2023	ES2337724	Field_D	0.16	0.17	1.34	0.08	2.52	<0.02	<0.1	0.04	0.22	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_240305	05 Mar 2024	ES2407635	Normal	0.1	0.1	0.8	0.05	1.14	<0.02	<0.1	0.02	0.11	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW144_240319	19 Mar 2024	1079850	Normal	0.08	0.08	0.66	0.03	1.1	<0.01	<0.05	0.01	0.09	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Western boundary of Base	MW148	1302_MW148_170807	07 Aug 2017	558368	Normal	0.22	0.33	2.7	0.17	4.5	<0.01	<0.05	0.06	0.32	0.04	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148A_170824	24 Aug 2017	560519	Normal	0.2	0.21	3.1	0.18	5.7	<0.01	<0.05	0.08	0.34	0.07	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148B_170824	24 Aug 2017	560519	Normal	0.2	0.19	3	0.16	4.3	<0.01	<0.05	0.07	0.31	0.07	0.13	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148C_170824	24 Aug 2017	560519	Normal	0.2	0.21	3.3	0.16	8	<0.01	<0.05	0.07	0.33	0.07	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC3_170824	24 Aug 2017	565303	Field_D	0.17	0.18	1.6	0.09	3.1	<0.01	<0.05	0.05	0.25	0.04	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148_170901	01 Sep 2017	561891	Normal	0.19	0.3	2.8	0.22	5.2	<0.01	<0.05	0.07	0.33	0.06	0.13	<0.01	<0.01	<0.01	<0.01	<0.01
		QC4_170824	27 Sep 2017	EB1720018	Interlab_D	0.51	0.45	2.61	0.17	4.23	<0.02	<0.1	0.1	0.5	0.12	0.21	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_171116	16 Nov 2017	573039	Normal	0.17	0.24	2.6	0.23	7.5	<0.01	<0.05	0.05	0.26	0.06	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148_180115	15 Jan 2018	580450	Normal	0.23	0.31	2.4	0.17	7.9	<0.01	<0.05	0.06	0.31	0.05	0.11	<0.01	<0.01	<0.01	<0.01	<0.01

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		QCMW20_180115	15 Jan 2018	EB1801996	Interlab_D	0.25	0.25	2.66	0.2	5.17	<0.02	<0.1	0.08	0.3	0.05	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCMW19_180115	15 Jan 2018	580450	Field_D	0.23	0.31	2.3	0.15	6.1	<0.01	<0.05	0.06	0.3	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148_180308	08 Mar 2018	588759	Normal	0.22	0.28	2.6	0.18	7.6	<0.01	<0.05	0.05	0.3	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148_4_180509	09 May 2018	598367	Normal	0.22	0.28	3	0.2	6.2	<0.01	0.06	0.08	0.41	0.06	0.15	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148_181213	13 Dec 2018	633394	Normal	0.19	0.3	3.2	0.17	7.8	<0.01	<0.05	0.06	0.34	0.04	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148_190320	20 Mar 2019	646323	Normal	0.22	0.22	2.4	0.18	4.6	<0.01	<0.05	0.06	0.28	0.05	0.11	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148_191217	17 Dec 2019	ES1942302	Normal	0.23	0.2	2.25	0.18	4.69	<0.02	<0.1	0.06	0.3	0.05	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC203_191217	17 Dec 2019	RN1259171	Interlab_D	0.15	0.17	1.9	0.13	3.1	<0.01	<0.05	0.043	0.23	0.04	0.082	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC103_191217	17 Dec 2019	ES1942302	Field_D	0.22	0.27	2.36	0.19	4.74	<0.02	<0.1	0.06	0.31	0.05	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_200414	16 Apr 2020	ES2012928	Normal	0.23	0.18	2.22	0.17	4.98	<0.02	<0.1	0.05	0.33	0.05	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_201103	03 Nov 2020	ES2039162	Normal	0.22	0.34	3	0.23	6.62	<0.02	<0.1	0.06	0.34	0.06	0.13	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_201212	12 Dec 2020	763330	Normal	0.16	0.19	2.1	0.14	6.4	<0.01	<0.05	0.04	0.26	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW148_210225	25 Feb 2021	778121	Normal	0.15	0.25	2.5	0.17	5.5	<0.01	<0.05	0.04	0.24	0.04	0.09	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC202_210225	25 Feb 2021	EM2103767	Interlab_D	0.16	0.18	2.07	0.14	3.4	<0.02	<0.10	<0.02	0.23	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_210506	06 May 2021	ES2117036	Normal	0.16	0.32	2.88	0.22	3.57	<0.02	<0.1	0.07	0.42	0.06	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_220928	28 Sep 2022	ES2235227	Normal	0.14	0.25	3.13	0.2	5.43	<0.02	<0.1	0.04	0.23	0.04	0.11	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_230323	23 Mar 2023	ES2310999	Normal	0.16	0.21	2.15	0.18	6.59	<0.02	<0.1	0.06	0.23	0.04	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_231030	30 Oct 2023	ES2337724	Normal	0.18	0.21	2.12	0.2	5.67	<0.02	<0.1	0.05	0.24	0.04	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_240305	05 Mar 2024	ES2407635	Normal	0.13	0.17	1.65	0.13	3.38	<0.02	<0.1	0.04	0.22	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW148_240318	18 Mar 2024	1079850	Normal	0.15	0.22	1.5	0.1	3.8	<0.01	<0.05	0.04	0.19	0.04	0.09	<0.01	<0.01	<0.01	<0.01	<0.01
	MW201	1302_MW201_170901	01 Sep 2017	561891	Normal	<0.01	<0.01	0.02	<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
		1302_MW201_180308	08 Mar 2018	588759	Normal	<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
		1302_MW201_211111	11 Nov 2021	ES2141185	Normal	<0.02	<0.02	0.01	<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
		1302_MW201_220308	08 Mar 2022	ES2208419	Normal	<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
Rapid Creek - Eastern end	MW156	1302_MW156_170807	07 Aug 2017	558368	Normal	0.24	0.26	2.3	0.18	5.7	<0.01	0.06	0.1	0.43	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156A_170823	23 Aug 2017	560308	Normal	0.23	0.23	2.3	0.13	5.6	<0.01	0.06	0.1	0.45	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_170905	05 Sep 2017	562268	Normal	0.25	0.22	2.7	0.11	6.5	<0.01	0.06	0.11	0.45	0.06	0.16	<0.01	<0.01	<0.01	<0.01	<0.01
		QC4_170823	27 Sep 2017	EB1720018	Interlab_D	0.19	0.18	2.06	0.12	2.15	<0.02	<0.1	0.06	0.32	0.06	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_171114	14 Nov 2017	572746	Normal	0.19	0.26	2.8	0.23	8.7	<0.01	0.07	0.11	0.4	0.05	0.16	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_180111	11 Jan 2018	580283	Normal	0.2	0.21	1.8	0.1	5.7	<0.01	0.05	0.08	0.39	0.04	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156A_180130	30 Jan 2018	583667	Normal	0.16	0.21	2.4	0.13	5	<0.01	0.06	0.1	0.37	0.05	0.11	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_180307	07 Mar 2018	588753	Normal	0.37	0.41	3.4	0.2	8.9	<0.01	0.09	0.14	0.71	0.08	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QCMW12_180307	07 Mar 2018	EB1806472	Interlab_D	0.38	0.39	3.35	0.21	6.34	<0.02	<0.1	0.14	0.7	0.08	0.14	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCMW11_180307	07 Mar 2018	588753	Field_D	0.37	0.38	3.6	0.2	8.3	<0.01	0.09	0.13	0.71	0.08	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_3_180508	08 May 2018	598367	Normal	0.31	0.53	3.5	0.29	8.2	<0.01	0.09	0.14	0.74	0.08	0.21	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_181213	13 Dec 2018	633394	Normal	0.21	0.22	2.2	0.25	5.9	<0.01	0.06	0.11	0.5	0.06	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_190320	20 Mar 2019	646323	Normal	0.19	0.21	1.9	0.14	5.2	<0.01	0.06	0.07	0.35	0.04	0.09	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_191217	17 Dec 2019	ES1942302	Normal	0.04	0.03	0.35	0.02	0.82	<0.02	<0.1	<0.02	0.07	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_200414	16 Apr 2020	ES2012928	Normal	<0.02	<0.02	0.1	<0.02	0.48	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_201103	03 Nov 2020	ES2039162	Normal	<0.02	<0.02	0.12	<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
		1302_MW156_201212	12 Dec 2020	763330	Normal	0.03	0.03	0.31	0.02	1	<0.01	<0.05	0.01	0.06	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_210225	25 Feb 2021	778121	Normal	0.02	0.02	0.2	0.01	0.69	<0.01	<0.05	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW156_210429	29 Apr 2021	ES2116496	Normal	0.11	0.13	1.32	0.1	3.46	<0.02	<0.1	0.05	0.24	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_211110	10 Nov 2021	ES2141185	Normal	0.15	0.17	1.44	0.09	3.35	<0.02	<0.1	0.04	0.32	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_220310	10 Mar 2022	ES2208419	Normal	0.29	0.28	2.17	0.17	5.09	<0.02	<0.1	0.09	0.58	0.06	0.13	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_220928	28 Sep 2022	ES2235227	Normal	0.17	0.16	1.43	0.08	3.33	<0.02	<0.10	0.06	0.26	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_230314	14 Mar 2023	ES2310999	Normal	0.3	0.32	2.74	0.18	5.98	<0.02	<0.1	0.14	0.64	0.07	0.16	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_231031	31 Oct 2023	ES2337724	Normal	0.14	0.16	1.44	0.12	3.81	<0.02	<0.1	0.06	0.26	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW156_240320	20 Mar 2024	ES2409473	Normal	0.23	0.26	2.36	0.16	6.55	<0.02	<0.1	0.1	0.51	0.06	0.13	<0.02	<0.02	<0.02	<0.02	<0.02
Off-Base Monitoring Wells																					
Off-Base - South	MW176	1302_MW176_170905	05 Sep 2017	562266	Normal	<0.01	<0.01	0.06	<0.01	0.09	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW176_180307	07 Mar 2018	588758	Normal	<0.01	<0.01	0.04	<0.01	0.09	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW176_190321	21 Mar 2019	646787	Normal	<0.01	<0.01	0.03	<0.01	0.07	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW176_201104	04 Nov 2020	ES2039162	Normal	<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
		1302_MW176_210428	28 Apr 2021	ES2116496	Normal	<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
		1302_MW176_211111	11 Nov 2021	ES2141185	Normal	<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
		1302_QC103_211111	11 Nov 2021	ES2141185	Field_D	<0.02	<0.02	0.04	<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
		1302_QC203_211111	11 Nov 2021	ES2141185	Field_D	<0.02	<0.02	0.04	<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
		1302_MW176_220308	08 Mar 2022	ES2208419	Normal	<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
		1302_MW176_220929	29 Sep 2022	ES2235227	Normal	<0.02	<0.02	0.04	<0.02	0.09	<0.02	<0.1	0.04	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW176_230320	20 Mar 2023	ES2310999	Normal	<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
		1302_QC201_230320	20 Mar 2023	RN1389152	Interlab_D	<0.01	<0.01	0.035	<0.01	0.058	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_QC101_230320	20 Mar 2023	ES2310999	Field_D	<0.02	<0.02	0.05	<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
		1302_MW176_231031	31 Oct 2023	ES2337724	Normal	<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
		1302_QC201_231031	31 Oct 2023	RN1410783	Interlab_D	<0.01	<0.01	0.025	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC101_231031	31 Oct 2023	ES2337724	Field_D	<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
		1302_MW176_240305	05 Mar 2024	ES2407635	Normal	<0.02	<0.02	0.04	<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
	MW180	1302_MW180_170906	06 Sep 2017	562310	Normal	<0.01	<0.01	0.06	<0.01	0.03	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW180_180307	07 Mar 2018	588758	Normal	0.01	<0.01	0.11	<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
		1302_MW180_181213	13 Dec 2018	633394	Normal	<0.01	<0.01	0.08	<0.01	0.09	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QCMW2_181213	13 Dec 2018	EB1831109	Interlab_D	<0.02	<0.02	0.05	<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
		1302_QCMW1_181213	13 Dec 2018	633394	Field_D	0.01	0.01	0.12	<0.01	0.35	<0.01	<0.05	<0.01	0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW180_190321	21 Mar 2019	646787	Normal	<0.01	<0.01	0.05	<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
		1302_MW180_191216	16 Dec 2019	ES1942302	Normal	<0.02	<0.02	0.05	<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
		1302_MW180_200415	16 Apr 2020	ES2012928	Normal	<0.02	<0.02	0.05	<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
		1302_MW180_201102	02 Nov 2020	ES2039162	Normal	<0.02	<0.02	0.05	<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
		1302_MW180_210428	28 Apr 2021	ES2116496	Normal	<0.02	<0.02	0.07	<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
		1302_MW180_211110	10 Nov 2021	ES2141185	Normal	<0.02	<0.02	0.07	<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
		1302_MW180_220308	08 Mar 2022	ES2208419	Normal	<0.02	<0.02	0.08	<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
		1302_MW180_220929	29 Sep 2022	ES2235227	Normal	0.04	<0.02	0.12	<0.02	0.15	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW180_230320	20 Mar 2023	ES2310999	Normal	<0.02	<0.02	0.08	<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
		1302_QC200_230320	20 Mar 2023	RN1389152	Interlab_D	<0.01	<0.01	0.065	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_230320	20 Mar 2023	ES2310999	Field_D	<0.02	<0.02	0.09	<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
		1302_MW180_231031	31 Oct 2023	ES2337724	Normal	<0.02	<0.02	0.05	<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
		1302_MW180_240305	05 Mar 2024	ES2407635	Normal	<0.02	<0.02	0.07	<0.02	0.01	<0.02	0.2	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW180_240318	18 Mar 2024	1079850	Normal	<0.01	<0.01	0.07	<0.01	0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW200	1302_MW200_170905	05 Sep 2017	562266	Normal	0.09	0.08	0.8	0.03	0.92	<0.01	<0.05	0.02	0.1	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW200_171117	17 Nov 2017	573308	Normal	0.09	0.09	0.84	0.04	1.5	<0.01	<0.05	0.02	0.11	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW200_180115	15 Jan 2018	580450	Normal	0.09	0.1	0.75	0.04	1.3	<0.01	<0.05	0.02	0.1	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW200_180307	07 Mar 2018	588758	Normal	0.02	0.02	0.22	<0.01	0.4	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW200_181213	13 Dec 2018	633394	Normal	0.12	0.13	1.1	0.09	3	<0.01	<0.05	0.03	0.16	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW200_190321	21 Mar 2019	646787	Normal	0.07	0.07	0.63	0.03	0.83	<0.01	<0.05	0.02	0.09	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW200_191216	16 Dec 2019	ES1942302	Normal	0.07	0.07	0.63	0.04	0.92	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC200_191216	16 Dec 2019	RN1259171	Interlab_D	0.063	0.067	0.65	0.024	0.89	<0.01	<0.05	<0.02	0.078	<0.01	0.025	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_191216	16 Dec 2019	ES1942302	Field_D	0.08	0.08	0.64	0.04	0.99	<0.02	<0.1	<0.02	0.09	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW200_200415	16 Apr 2020	ES2012928	Normal	0.06	0.05	0.58	0.04	1.23	<0.02	<0.1	<0.02	0.09	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC202_200415	16 Apr 2020	RN1271840	Interlab_D	0.041	0.042	0.43	0.02	0.86	<0.01	<0.05	<0.02	0.062	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.02
		1320_QC102_200415	16 Apr 2020	ES2012928	Field_D	0.08	0.06	0.68	0.04	1.24	<0.02	<0.1	<0.02	0.11	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW200_201102	02 Nov 2020	ES2039162	Normal	0.06	0.08	0.6	0.03	0.97	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC201_201102	02 Nov 2020	RN1294219	Interlab_D	0.33	0.36	3.1	0.18	4.3	<0.01	0.088	0.15	0.64	0.1	0.19	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_MW200_210428	28 Apr 2021	ES2116496	Normal	0.05	0.06	0.57	0.03	0.89	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW200_211111	11 Nov 2021	ES2141185	Normal	0.09	0.08	0.74	0.04	1.04	<0.02	<0.1	0.02	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW200_220308	08 Mar 2022	ES2208419	Normal	0.03	0.03	0.25	<0.02	0.36	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW200_220929	29 Sep 2022	ES2235227	Normal	0.08	0.08	1.14	0.05	1.35	<0.02	<0.1	0.03	0.18	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW200_230320	20 Mar 2023	ES2310999	Normal	0.02	0.03	0.3	<0.02	0.46	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW200_231031	31 Oct 2023	ES2337724	Normal	0.07	0.08	0.63	0.04	0.89	<0.02	<0.1	<0.02	0.08	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW200_240305	05 Mar 2024	ES2407635	Normal	<0.02	0.02	0.2	<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
	MW209	1302_MW209_171117	17 Nov 2017	573308	Normal	0.01	0.01	0.14	<0.01	0.22	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW209_180115	15 Jan 2018	580450	Normal	0.01	0.01	0.1	<0.01	0.16	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW209_180307	07 Mar 2018	588758	Normal	<0.01	<0.01	0.09	<0.01	0.15	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW209_181213	13 Dec 2018	633394	Normal	0.01	0.02	0.17	<0.01	0.41	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW209_190321	21 Mar 2019	646787	Normal	0.01	<0.01	0.1	<0.01	0.18	<0.01	<0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		*1302_MW211_191216	16 Dec 2019	ES1942302	Normal	<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
		*1302_MW211_200414	16 Apr 2020	ES2012928	Normal	<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
		*1302_MW191_201103	03 Nov 2020	ES2039162	Normal	<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
		*1302_MW211_210428	28 Apr 2021	ES2116496	Normal	<0.02	<0.02	0.03	<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
		1302_MW209_211110	10 Nov 2021	ES2141185	Normal	<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
		1302_MW209_220308	08 Mar 2022	ES2208419	Normal	<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
		1302_MW209_220928	28 Sep 2022	ES2235227	Normal	<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
		1302_QC101_220928	28 Sep 2022	ES2235227	Field_D	<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
		1302_MW209_230320	20 Mar 2023	ES2310999	Normal	<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
		1302_MW209_231031	31 Oct 2023	ES2337724	Normal	<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
		1302_MW209_240305	05 Mar 2024	ES2407635	Normal	<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
Off-Base - North	MW185	1302_MW185_170905	05 Sep 2017	562266	Normal	<0.01	<0.01	0.03	<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

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_MW185_171116	16 Nov 2017	573039	Normal	<0.01	<0.01	0.02	<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
		1302_MW185_180115	15 Jan 2018	580450	Normal	<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
		1302_MW185_180322	22 Mar 2018	590910	Normal	<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
		1302_MW185_181213	13 Dec 2018	633394	Normal	0.07	0.07	0.47	<0.01	0.23	<0.01	<0.05	0.02	0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW185_190218	18 Feb 2019	641086	Normal	0.02	0.02	0.14	<0.01	0.03	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QCMW01_190218	18 Feb 2019	EB1904669	Interlab_D	0.02	<0.02	0.11	<0.02	0.15	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCMW02_190218	18 Feb 2019	641086	Field_D	0.02	0.02	0.13	<0.01	0.15	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW185_190321	21 Mar 2019	646787	Normal	<0.01	<0.01	0.04	<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
		1302_MW185_191216	16 Dec 2019	ES1942302	Normal	0.04	0.04	0.26	<0.02	0.1	<0.02	<0.1	0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW185_201102	02 Nov 2020	ES2039162	Normal	0.03	0.05	0.34	<0.02	0.26	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW185_210428	28 Apr 2021	ES2116496	Normal	<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
		1302_MW185_211111	11 Nov 2021	ES2141185	Normal	<0.02	<0.02	0.1	<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
		1302_MW185_220308	08 Mar 2022	ES2208419	Normal	<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
		1302_MW185_220928	28 Sep 2022	ES2235227	Normal	0.03	0.04	0.26	<0.02	0.12	<0.02	<0.1	<0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW185_230320	20 Mar 2023	ES2310999	Normal	<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
		1302_MW185_231031	31 Oct 2023	ES2337724	Normal	0.04	0.04	0.24	<0.02	0.13	<0.02	<0.1	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC202_231031	31 Oct 2023	RN1410783	Interlab_D	0.038	0.027	0.24	<0.01	0.058	<0.01	<0.05	<0.02	0.021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC102_231031	31 Oct 2023	ES2337724	Field_D	0.04	0.03	0.22	<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
		1302_MW185_240305	05 Mar 2024	ES2407635	Normal	<0.02	<0.02	0.07	<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
	MW189	1302_MW189_170905	05 Sep 2017	562266	Normal	<0.01	<0.01	0.05	<0.01	0.03	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW189_180309	08 Mar 2018	588949	Normal	<0.01	<0.01	0.02	<0.01	0.03	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW189_200417	23 Apr 2020	ES2013815	Normal	<0.02	<0.02	0.04	<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
		1302_QC100_200417	17 Apr 2020	ES2013815	Field_D	<0.02	<0.02	0.04	<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
Off-Base - West	MW210	1302_MW210_171116	16 Nov 2017	573039	Normal	0.06	0.08	0.91	0.08	3.4	<0.01	<0.05	0.03	0.12	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW210_180115	15 Jan 2018	580450	Normal	0.07	0.1	0.78	0.04	1.8	<0.01	<0.05	0.03	0.08	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW210_180308	08 Mar 2018	588759	Normal	0.03	0.04	0.42	0.02	1.1	<0.01	<0.05	0.02	0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW210_181213	13 Dec 2018	633394	Normal	0.01	0.01	0.23	0.02	2.7	<0.01	<0.05	0.02	0.04	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW210_190321	21 Mar 2019	646787	Normal	0.05	0.06	0.63	0.03	1.3	<0.01	<0.05	0.02	0.07	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW210_191216	16 Dec 2019	ES1942302	Normal	0.11	0.09	0.75	0.06	2.08	<0.02	<0.1	0.03	0.11	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_200415	16 Apr 2020	ES2012928	Normal	0.14	0.08	0.92	0.08	2.48	<0.02	<0.1	0.03	0.15	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_201102	02 Nov 2020	ES2039162	Normal	0.16	0.13	1.08	0.09	2.91	<0.02	<0.1	<0.02	0.15	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_210428	28 Apr 2021	ES2116496	Normal	0.21	0.12	1.55	0.11	2.73	<0.02	<0.1	0.04	0.16	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_211111	11 Nov 2021	ES2141185	Normal	0.04	0.03	0.39	<0.02	1.1	<0.02	<0.1	0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_220308	08 Mar 2022	ES2208419	Normal	0.04	0.05	0.5	0.02	0.82	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_220928	28 Sep 2022	ES2235227	Normal	0.12	0.08	0.74	0.06	2.13	<0.02	<0.1	0.03	0.12	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_230320	20 Mar 2023	ES2310999	Normal	0.03	0.04	0.44	0.04	1.47	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_231031	31 Oct 2023	ES2337724	Normal	0.07	0.09	0.8	0.07	2.49	<0.02	<0.1	0.03	0.11	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW210_240305	05 Mar 2024	ES2407635	Normal	0.06	0.06	0.56	0.04	1.43	<0.02	<0.1	0.02	0.08	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
Off-Base - South west	MW211	1302_MW211_171116	16 Nov 2017	573039	Normal	<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
		1302_MW211_180115	15 Jan 2018	580450	Normal	<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
		1302_MW211_180308	08 Mar 2018	588759	Normal	<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
		1302_MW211_181213	13 Dec 2018	633394	Normal	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW211_190321	21 Mar 2019	646787	Normal	<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
		*1302_MW209_191216	16 Dec 2019	ES1942302	Normal	<0.02	<0.02	0.14	<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
		*1302_MW209_200415	16 Apr 2020	ES2012928	Normal	<0.02	<0.02	0.13	<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
		1302_MW211_201103	03 Nov 2020	ES2039162	Normal	<0.02	<0.02	0.16	<0.02	0.27	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		*1302_MW209_201212	12 Dec 2020	763330	Normal	<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
		*1302_MW209_210428	28 Apr 2021	ES2116496	Normal	<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
		1302_MW211_211111	11 Nov 2021	ES2141185	Normal	<0.02	<0.02	0.14	<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
		1302_MW211_220308	08 Mar 2022	ES2208419	Normal	<0.02	<0.02	0.04	<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
		1302_MW211_220929	29 Sep 2022	ES2235227	Normal	<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
		1302_QC200_220929	29 Sep 2022	RN1368680	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.67	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_220929	29 Sep 2022	ES2235227	Field_D	<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
		1302_MW211_230320	20 Mar 2023	ES2310999	Normal	<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
		1302_MW211_231031	31 Oct 2023	ES2337724	Normal	<0.02	<0.02	0.09	<0.02	0.23	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW211_240305	05 Mar 2024	ES2407635	Normal	<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
Rapid Creek	MW190	1302_MW190A_170830	30 Aug 2017	561291	Normal	0.13	0.15	1.2	0.07	2.2	<0.01	<0.05	0.06	0.21	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW190_170905	05 Sep 2017	562266	Normal	0.14	0.14	1.4	0.05	2.1	<0.01	<0.05	0.04	0.2	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW190_171116	16 Nov 2017	573039	Normal	0.09	0.12	1.3	0.08	2.8	<0.01	<0.05	0.04	0.16	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW190_180111	11 Jan 2018	580283	Normal	0.11	0.14	1.1	0.06	2.2	<0.01	<0.05	0.04	0.18	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW190_180309	08 Mar 2018	588949	Normal	0.02	0.03	0.25	0.01	0.74	<0.01	<0.05	<0.01	0.03	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW190_3_180509	09 May 2018	598367	Normal	0.11	0.14	1.4	0.06	1.3	<0.01	<0.05	0.03	0.12	0.03	0.04	<0.01	<0.01	<0.01	<0.01	<0.01

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_MW190_7_180509	**09 May 2018**	**598367**	**Normal**	<0.01	<0.01	0.05	<0.01	0.07	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW190_11_180509	**09 May 2018**	**598367**	**Normal**	<0.01	0.01	0.14	<0.01	0.31	<0.01	<0.05	0.01	0.02	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW190_211111	**11 Nov 2021**	**ES2141185**	**Normal**	0.14	0.14	1.36	0.08	2.54	<0.02	<0.1	0.09	0.46	0.05	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW190_220308	**08 Mar 2022**	**ES2208419**	**Normal**	<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
		1302_MW190_220928	**28 Sep 2022**	**ES2235227**	**Normal**	0.13	0.19	1.61	0.1	2.78	<0.02	<0.1	0.05	0.29	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW190_230320	**20 Mar 2023**	**ES2310999**	**Normal**	<0.02	<0.02	0.13	<0.02	0.36	<0.02	<0.1	<0.02	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW190_231031	**31 Oct 2023**	**ES2337724**	**Normal**	0.08	0.09	0.71	0.05	1.14	<0.02	<0.1	0.03	0.15	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW190_240305	**05 Mar 2024**	**ES2407635**	**Normal**	<0.02	<0.02	0.09	<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
	MW191	**1302_MW191_170905**	**05 Sep 2017**	**562266**	**Normal**	0.08	0.08	1	0.03	1.8	<0.01	<0.05	0.03	0.14	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC3MW_170905	**11 Oct 2017**	**EB1720977**	**Interlab_D**	0.21	0.11	1.21	0.06	2.09	<0.02	<0.1	0.02	0.18	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_171116	**16 Nov 2017**	**573039**	**Normal**	0.07	0.1	1	0.06	2.9	<0.01	<0.05	0.04	0.16	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW191_180115	**15 Jan 2018**	**580450**	**Normal**	0.08	0.1	0.82	0.04	2.2	<0.01	<0.05	0.04	0.16	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW191_180309	**08 Mar 2018**	**588949**	**Normal**	0.06	0.08	0.63	0.03	1.8	<0.01	<0.05	0.02	0.11	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW191_4_180509	**09 May 2018**	**598367**	**Normal**	0.07	0.11	1.4	0.04	2	<0.01	<0.05	0.04	0.16	0.03	0.05	0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW191_181213	**13 Dec 2018**	**633394**	**Normal**	0.08	0.09	1	0.05	2.9	<0.01	<0.05	0.04	0.18	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QCMW6_181213	**13 Dec 2018**	**EB1831109**	**Interlab_D**	0.07	0.06	0.94	0.03	1.53	<0.02	<0.1	0.02	0.14	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCMW5_181213	**13 Dec 2018**	**633394**	**Field_D**	0.07	0.1	1.1	0.05	2.7	<0.01	<0.05	0.03	0.15	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW191_190321	**21 Mar 2019**	**646787**	**Normal**	0.06	0.07	0.91	0.03	1.7	<0.01	<0.05	0.03	0.15	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
		QCGW11_190321	**21 Mar 2019**	**EB1907601**	**Interlab_D**	0.07	0.08	0.96	0.04	1.96	<0.02	<0.1	0.02	0.14	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QCGW10_190321	**21 Mar 2019**	**646787**	**Field_D**	0.06	0.08	0.93	0.03	1.7	<0.01	<0.05	0.04	0.16	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW191_191218	**18 Dec 2019**	**ES1942302**	**Normal**	0.08	0.08	0.76	0.04	1.7	<0.02	<0.1	0.03	0.14	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_200415	**16 Apr 2020**	**ES2012928**	**Normal**	0.06	0.06	0.74	0.03	1.17	<0.02	<0.1	0.02	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC203_200415	**16 Apr 2020**	**RN1271840**	**Interlab_D**	0.052	0.064	0.73	0.019	1.3	<0.01	<0.05	0.024	0.1	<0.01	0.027	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC103_200415	**16 Apr 2020**	**ES2012928**	**Field_D**	0.07	0.06	0.86	0.03	1.64	<0.02	<0.1	0.02	0.16	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		***1302_MW209_201103**	**03 Nov 2020**	**ES2039162**	**Normal**	0.06	0.08	0.75	0.03	1.59	<0.02	<0.1	0.03	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_210428	**28 Apr 2021**	**ES2116496**	**Normal**	0.05	0.07	0.79	0.03	1.13	<0.02	<0.1	0.02	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_211111	**11 Nov 2021**	**ES2141185**	**Normal**	0.06	0.05	0.64	0.02	1.37	<0.02	<0.1	0.04	0.17	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_220308	**08 Mar 2022**	**ES2208419**	**Normal**	0.07	0.09	0.81	0.04	1.26	<0.02	<0.1	0.03	0.17	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_220928	**28 Sep 2022**	**ES2235227**	**Normal**	0.08	0.11	1.04	0.05	2.14	<0.02	<0.1	0.03	0.17	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_230320	**20 Mar 2023**	**ES2310999**	**Normal**	0.06	0.07	0.78	0.04	1.87	<0.02	<0.1	0.04	0.12	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_231031	**31 Oct 2023**	**ES2337724**	**Normal**	0.06	0.06	0.64	0.04	1.62	<0.02	<0.1	0.04	0.13	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW191_240305	**05 Mar 2024**	**ES2407635**	**Normal**	0.03	0.04	0.48	<0.02	0.98	<0.02	<0.1	1.11	0.08	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
	MW193	**1302_MW193_170905**	**05 Sep 2017**	**562266**	**Normal**	0.15	0.15	1.6	0.06	2.5	<0.01	<0.05	0.05	0.23	0.03	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_QC2MW_170905	**11 Oct 2017**	**EB1720977**	**Interlab_D**	0.32	0.22	1.83	0.12	3.03	<0.02	<0.1	0.05	0.29	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW193_171116	**16 Nov 2017**	**573039**	**Normal**	0.13	0.15	1.4	0.07	2.9	<0.01	<0.05	0.04	0.21	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW193_180115	**15 Jan 2018**	**580450**	**Normal**	0.13	0.18	1.2	0.07	2.6	<0.01	<0.05	0.05	0.2	0.02	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW193A_180205	**05 Feb 2018**	**583667**	**Normal**	0.03	0.04	0.35	0.02	0.8	<0.01	<0.05	0.02	0.07	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW193_180309	**08 Mar 2018**	**588949**	**Normal**	0.03	0.03	0.23	0.01	0.71	<0.01	<0.05	<0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW193_181213	**13 Dec 2018**	**633394**	**Normal**	0.12	0.16	1.6	0.1	3.4	<0.01	<0.05	0.07	0.33	0.04	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW193_190321	**21 Mar 2019**	**646787**	**Normal**	0.13	0.15	1.4	0.07	1.7	<0.01	<0.05	0.05	0.22	0.02	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW193_191218	**18 Dec 2019**	**ES1942302**	**Normal**	0.12	0.12	1.24	0.07	1.89	<0.02	<0.1	0.06	0.24	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW193_200415	**16 Apr 2020**	**ES2012928**	**Normal**	0.02	<0.02	0.27	0.02	1.1	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW193_201102	**02 Nov 2020**	**ES2039162**	**Normal**	0.03	0.04	0.33	<0.02	0.62	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW193_210506	**06 May 2021**	**ES2117036**	**Normal**	<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
	MW194	**1302_MW194_170906**	**06 Sep 2017**	**562310**	**Normal**	0.08	0.13	1.1	0.08	3.8	<0.01	<0.05	0.05	0.24	0.04	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW194_171116	**16 Nov 2017**	**573039**	**Normal**	0.11	0.11	1.1	0.07	4.9	<0.01	<0.05	0.05	0.25	0.03	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW194A_180205	**05 Feb 2018**	**583667**	**Normal**	0.09	0.1	0.99	0.06	2.9	<0.01	<0.05	0.04	0.2	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW194_180309	**08 Mar 2018**	**588949**	**Normal**	0.08	0.1	0.81	0.06	3.1	<0.01	<0.05	0.03	0.19	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW194_181213	**13 Dec 2018**	**633394**	**Normal**	0.15	0.19	1.5	0.06	3.3	<0.01	<0.05	0.05	0.26	0.03	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW194_190321	**21 Mar 2019**	**646787**	**Normal**	0.14	0.13	1.2	0.07	2.1	<0.01	<0.05	0.07	0.29	0.03	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW194_191218	**18 Dec 2019**	**ES1942302**	**Normal**	0.1	0.1	0.87	0.06	2.09	<0.02	<0.1	0.04	0.18	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_200415	**16 Apr 2020**	**ES2012928**	**Normal**	0.12	0.08	0.87	0.06	2.43	<0.02	<0.1	0.03	0.23	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_201102	**02 Nov 2020**	**ES2039162**	**Normal**	0.11	0.13	0.97	0.06	2.22	<0.02	<0.1	<0.02	0.2	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_210506	**06 May 2021**	**ES2117036**	**Normal**	0.06	0.08	0.77	0.06	1.83	<0.02	<0.1	0.03	0.18	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_211111	**11 Nov 2021**	**ES2141185**	**Normal**	0.18	0.14	1.14	0.08	3.51	<0.02	<0.1	0.07	0.33	0.04	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_220308	**08 Mar 2022**	**ES2208419**	**Normal**	0.13	0.14	1.23	0.08	2.41	<0.02	<0.1	0.06	0.36	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_220928	**28 Sep 2022**	**ES2235227**	**Normal**	0.12	0.14	1.14	0.08	2.7	<0.02	<0.1	0.04	0.27	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_230320	**20 Mar 2023**	**ES2310999**	**Normal**	0.09	0.1	1.09	0.08	3.66	<0.02	<0.1	0.06	0.22	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_231031	**31 Oct 2023**	**ES2337724**	**Normal**	0.08	0.09	0.73	0.06	1.78	<0.02	<0.1	0.04	0.16	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW194_240305	**05 Mar 2024**	**ES2407635**	**Normal**	0.07	0.08	0.73	0.05	1.95	<0.02	<0.1	0.03	0.15	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
	MW195	**1302_MW195_170906**	**06 Sep 2017**	**562310**	**Normal**	0.04	0.06	0.47	0.02	0.76	<0.01	<0.05	0.01	0.06	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW195_171116	**16 Nov 2017**	**573039**	**Normal**	0.03	0.03	0.28	0.01	0.53	<0.01	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

						PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids									
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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
PFAS NEMP 2020 Drinking Water																0.56					
PFAS NEMP 2020 Freshwater 99%										0.00023						19					
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																
		1302_MW195_180115	**15 Jan 2018**	**580450**	**Normal**	0.1	0.11	0.76	0.03	1.1	<0.01	<0.05	0.02	0.07	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW195_180309	**08 Mar 2018**	**588949**	**Normal**	0.03	0.04	0.32	0.02	0.86	<0.01	<0.05	<0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW195_181213	**13 Dec 2018**	**633394**	**Normal**	0.09	0.11	0.87	0.02	1.1	<0.01	<0.05	0.01	0.07	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW195_190321	**21 Mar 2019**	**646787**	**Normal**	0.06	0.06	0.54	0.03	0.78	<0.01	<0.05	0.04	0.11	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW195_191218	**18 Dec 2019**	**ES1942302**	**Normal**	<0.02	<0.02	0.04	<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
		1302_MW195_200415	**16 Apr 2020**	**ES2012928**	**Normal**	<0.02	<0.02	0.53	0.08	3.49	<0.02	<0.1	<0.02	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW195_201102	**02 Nov 2020**	**ES2039162**	**Normal**	<0.02	<0.02	0.06	<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
		1302_QC200_201102	**02 Nov 2020**	**RN1294219**	**Interlab_D**	<0.01	<0.01	0.044	<0.01	0.17	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_201102	**02 Nov 2020**	**ES2039162**	**Field_D**	<0.02	<0.02	0.04	<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
		1302_MW195_210506	**06 May 2021**	**ES2117036**	**Normal**	<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
		1302_MW195_211111	**11 Nov 2021**	**ES2141185**	**Normal**	0.09	0.08	0.73	0.04	1.04	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW195_220308	**08 Mar 2022**	**ES2208419**	**Normal**	<0.02	<0.02	0.08	<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
		1302_MW195_220928	**28 Sep 2022**	**ES2235227**	**Normal**	0.05	0.06	0.52	0.03	0.92	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_QC202_220928	**28 Sep 2022**	**RN1368680**	**Interlab_D**	0.07	0.089	1.1	0.044	1.8	<0.01	<0.05	0.024	0.096	0.016	0.034	<0.01	<0.01	<0.01	<0.01	<0.02
		1302_QC100_220928	**28 Sep 2022**	**ES2235227**	**Field_D**	0.03	0.04	0.33	<0.02	0.67	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW195_230320	**20 Mar 2023**	**ES2310999**	**Normal**	0.03	0.03	0.35	0.02	0.92	<0.02	<0.1	<0.02	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW195_231031	**31 Oct 2023**	**ES2337724**	**Normal**	<0.02	<0.02	0.04	<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
		1302_MW195_240305	**05 Mar 2024**	**ES2407635**	**Normal**	<0.02	<0.02	0.19	<0.02	0.41	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
FFTA2 (DIA)	**MW197**	**1302_MW197_170907**	**07 Sep 2017**	**562496**	**Normal**	0.24	0.29	2.2	0.18	4.1	0.03	0.08	0.13	0.48	0.08	0.14	0.03	0.03	0.03	0.03	0.03
		1302_MW197_180111	**11 Jan 2018**	**580283**	**Normal**	0.18	0.23	2.2	0.19	7.8	<0.01	<0.05	0.08	0.39	0.05	0.11	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW197_180308	**08 Mar 2018**	**588968**	**Normal**	0.18	0.28	3	0.23	7.8	<0.01	0.05	0.12	0.53	0.06	0.15	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW197_181214	**14 Dec 2018**	**633343**	**Normal**	0.19	0.23	3.2	0.36	9.2	0.02	0.05	0.11	0.51	0.06	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW197_190320	**20 Mar 2019**	**646323**	**Normal**	0.24	0.25	2.7	0.22	6.7	<0.01	0.06	0.1	0.48	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01
		1302_MW197_200414	**16 Apr 2020**	**ES2012928**	**Normal**	0.34	0.33	3.75	0.24	6.16	<0.02	<0.1	0.16	0.86	0.08	0.18	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW197_201103	**03 Nov 2020**	**ES2039162**	**Normal**	0.22	0.4	4.93	0.47	18.3	0.02	<0.1	0.17	0.81	0.1	0.3	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW197_210429	**29 Apr 2021**	**ES2116496**	**Normal**	0.23	0.3	3.18	0.2	5.66	<0.02	<0.1	0.12	0.64	0.07	0.15	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW197_211109	**09 Nov 2021**	**ES2141185**	**Normal**	0.21	0.28	2.93	0.29	6.68	<0.02	<0.1	0.08	0.56	0.06	0.16	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW197_220309	**09 Mar 2022**	**ES2208419**	**Normal**	0.2	0.27	2.58	0.15	4.9	<0.02	<0.1	0.11	0.68	0.04	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW197_230323	**23 Mar 2023**	**ES2310999**	**Normal**	0.14	0.21	2.31	0.12	4.89	<0.02	<0.1	0.08	0.47	0.06	0.12	<0.02	<0.02	<0.02	<0.02	<0.02
		1302_MW197_240319	**22 Mar 2024**	**ES2409473**	**Normal**	0.07	0.1	1.35	0.08	4.34	<0.02	<0.1	0.05	0.27	0.03	0.08	<0.02	<0.02	<0.02	<0.02	<0.02

Notes:

* = MW209 and MW211 have historically been incorrectly labelled. Location ID's have been corrected in this table.

** = MW502 was sampled in March 2024 but incorrectly labelled as MW422

Environmental Standards

HEPA, January 2020, PFAS NEMP 2020 Drinking Water

HEPA, January 2020, PFAS NEMP 2020 Freshwater 99%

					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
On-Base Monitoring Wells																		
RAAF Fire Station	**MW103**	**1302_MW103_170724**	**24 Jul 2017**	**555927**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	17.3	19.65
		1302_MW103_170822	**22 Aug 2017**	**560107**	<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	<0.1
		1302_MW103_170823	**23 Aug 2017**	**560306**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	12.7	15.09
		1302_MW103_171114	**14 Nov 2017**	**572746**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.96	2.17
		1302_MW103_180308	**08 Mar 2018**	**588949**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	17.2	19.24
		1302_MW103_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	16.7	18.39
		1302_MW103_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	11.1	13.09
		1302_QCGW04_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.9	12.86
		QCGW05	**20 Mar 2019**	**EB1907348**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	13.1	14.7
		1302_MW103_191216	**16 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	21.7	23.9
		1302_MW103_200415	**16 Apr 2020**	**ES2012928**	<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	18.4
		1302_MW103_201102	**02 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	42	48
		1302_MW103_210429	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	27.9	32.1
		1302_QC202_210429	**29 Apr 2021**	**RN1314232**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	22	25.45
		1302_QC102_210429	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	40.3	46.30
		1302_MW103_211111	**11 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	43.8	49.90
		1302_QC202_211111	**11 Nov 2021**	**RN1334898**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	31.4	35.47
		1302_QC102_211111	**11 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	41.8	47.70
		1302_MW103_220307	**07 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	21.9	24.30
		1302_MW103_220929	**29 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	48.6	58.50
		1302_MW103_230323	**23 Mar 2023**	**ES2310999**	<0.05	<0.05	4.62	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	14.1	22.30
		1302_MW103_231030	**30 Oct 2023**	**ES2337724**	<0.05	<0.05	1.89	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	13.6	17.80
		1302_MW103_240305	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	2.13	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.26	14.50
Down-gradient of Hangar 31	**MW107**	**1302_MW107_170710**	**10 Jul 2017**	**553811**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	14.1	17.15
		1302_MW107_170829	**29 Aug 2017**	**561056**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	12.1	14.55
		1302_MW107_171114	**14 Nov 2017**	**572746**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	14.8	17.38
		1302_MW107_180112	**12 Jan 2018**	**580464**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	11.8	14.10
		1302_MW107_180308	**08 Mar 2018**	**588968**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8.8	10.61
		1302_MW107_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	13.9	16.19
		1302_MW107_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.1	11.40
		1302_MW107_191216	**16 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.71	11.70
		1302_MW107_200414	**16 Apr 2020**	**ES2012928**	<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	12.90
		1302_MW107_201102	**02 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	10.9	13.30
		1302_QC101_201102	**02 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	10.9	13.40
		1302_MW107_210429	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.58	11.50
		1302_MW107_211111	**11 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	13.2	16.10
		1302_MW107_220309	**09 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.46	10.40
		1302_MW107_220929	**29 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.11	10.90
		1302_MW107_230323	**23 Mar 2023**	**ES2310999**	<0.05	<0.05	3.92	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	11.8	19.50
		1302_MW107_231030	**30 Oct 2023**	**ES2337724**	<0.05	<0.05	1.21	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.15	11.30
		1302_MW107_240305	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	1.4	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.24	9.98
		1302_MW107_240318	**18 Mar 2024**	**1079850**	<0.01	<0.01	4	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8.5	15.58
Former ARFF Fire Station	**MW115**	**1302_MW115_170803**	**03 Aug 2017**	**557384**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	111	135.07
		1302_MW115_170824	**24 Aug 2017**	**560518**	<0.01	<0.01	0.06	0.04	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	386	421.84
		1302_MW115_171113	**13 Nov 2017**	**572745**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	317	362.60
		1302_MW115_180112	**12 Jan 2018**	**580464**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	158	179.91
		1302_MW115_180306	**06 Mar 2018**	**588389**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	68	83.06
		1302_MW115_7_180509	**09 May 2018**	**598367**	<0.01	<0.01	<0.05	<0.01	<0.01	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	122	142.58
		1302_MW115_181215	**15 Dec 2018**	**633343**	<0.2	<0.2	0.23	<0.2	<0.2	0.25	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	279	320.28
		1302_MW115_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	0.11	<0.01	<0.01	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	91	108.87
		1302_MW115_191217	**17 Dec 2019**	**ES1942302**	<0.05	<0.05	0.05	<0.05	<0.05	0.14	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	301	340.00
		1302_MW115_200414	**16 Apr 2020**	**ES2012928**	<0.12	<0.05	<0.05	<0.05	<0.05	0.14	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	93.8	110.00
		1302_MW115_201103	**03 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	0.19	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	309	344.00
		1302_MW115_210429	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	110	131.00
		1302_MW115_211110	**10 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	0.34	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	88.6	111.00
		1302_MW115_220310	**10 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	85.2	106.00
		1302_MW115_12.0_221104	**04 Nov 2022**	**938328**	<0.01	<0.01	<0.05	0.03	<0.01	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	197	218.56
		1302_MW115_230314	**14 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	63.6	74.00
		1302_QC200_230314	**14 Mar 2023**	**RN1389152**	<0.02	<0.01	<0.01	<0.01	<0.01	0.03	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	44	51.79
		1302_QC100_230314	**14 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	64.5	76.20
		1302_MW115_231031	**31 Oct 2023**	**ES2337724**	<0.12	<0.05	<0.05	<0.05	<0.05	0.16	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	228	254.00

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_MW115_240320	**20 Mar 2024**	**ES2409473**	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	66.9	77.60
Down-gradient of RAAF Fire Station	**MW128**	**1302_MW128_170724**	**24 Jul 2017**	**555927**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.6	11.26
		1302_MW128_170901	**01 Sep 2017**	**561891**	<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	11.89
		1302_MW128_171116	**16 Nov 2017**	**573039**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.4	12.29
		1302_MW128_180115	**15 Jan 2018**	**580450**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.7	11.57
		1302_MW128_180308	**08 Mar 2018**	**588759**	<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	12.81
		1302_MW128_4_180509	**09 May 2018**	**598367**	<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	12.15
		1302_MW128_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.2	11.38
		1302_MW128_190321	**21 Mar 2019**	**646787**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.9	9.71
		QCGW09_190321	**21 Mar 2019**	**EB1907601**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.51	10.00
		1302_QCGW08_190321	**21 Mar 2019**	**646787**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.6	9.45
		1302_MW128_191217	**17 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.41	9.92
		1302_MW128_200415	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.29	11.20
		1302_QC201_200415	**16 Apr 2020**	**RN1271840**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	7.7	9.11
		1302_QC101_200415	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	10.8	12.90
		1302_MW128_201103	**03 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	12	14.20
		1302_MW128_201212	**12 Dec 2020**	**763330**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.7	12.27
		1302_MW128_210225	**25 Feb 2021**	**778121**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	15.6	17.64
		1302_QC102_210225	**25 Feb 2021**	**778121**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	21.8	23.79
		1302_MW128_210506	**06 May 2021**	**ES2117036**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.67	6.97
		1302_QC204_210506	**06 May 2021**	**RN1314391**	<0.02	<0.01	0.023	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	5.2	6.33
		1302_QC104_210506	**06 May 2021**	**ES2117036**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.74	8.02
		1302_MW128_211111	**11 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.5	8.88
		1302_MW128_220307	**07 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.59	6.63
		1302_QC200_220307	**07 Mar 2022**	**RN1346368**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	3.68	4.63
		1302_QC100_220307	**07 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.66	6.72
		1302_MW128_221010	**10 Oct 2022**	**ES2236478**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.11	10.80
		1302_MW128_230323	**23 Mar 2023**	**ES2310999**	<0.05	<0.05	0.15	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.52	6.53
		1302_MW128_231109	**09 Nov 2023**	**ES2338712**	<0.05	<0.05	0.8	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.56	6.48
		1302_QC100_231109	**09 Nov 2023**	**ES2338712**	<0.05	<0.05	0.77	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.71	6.64
		1302_MW128_240304	**04 Mar 2024**	**ES2407635**	<0.05	<0.05	0.35	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.73	6.24
		1302_MW128_240320	**20 Mar 2024**	**1080327**	<0.01	<0.01	0.83	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.4	5.54
		1302_QC104_240320	**20 Mar 2024**	**1080327**	<0.01	<0.01	0.81	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.8	6.91
FFF1	**MW215**	**1302_MW125_170724**	**24 Jul 2017**	**555927**	<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	0.10
		1302_QC1GW_170724	**24 Jul 2017**	**555927**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.11
		1302_MW125_170901	**01 Sep 2017**	**561891**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.12
		QCMW22_180115	**12 Jan 2018**	**EB1801996**	<0.05	<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
		1302_MW125_180115	**15 Jan 2018**	**580450**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.33	0.33
		1302_QCMW21_180115	**15 Jan 2018**	**580450**	<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
		1302_MW125_180308	**08 Mar 2018**	**588759**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.88	1.06
		1302_MW215_191216	**16 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.84	4.65
		1302_MW215_200414	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.43	8.79
		1302_MW215_201103	**03 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.82	9.38
		1302_MW215_210506	**06 May 2021**	**ES2117036**	<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	9.13
		1302_MW215_211111	**11 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.26	8.43
		1302_MW215_220929	**29 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.97	7.08
		1302_MW215_230323	**23 Mar 2023**	**ES2310999**	<0.05	<0.05	3.5	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.32	15.50
		1302_MW215_231030	**30 Oct 2023**	**ES2337724**	<0.05	<0.05	1.81	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.59	8.00
		1302_MW215_240305	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	1.95	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.38	8.66
FFF4 & FFF6	**MW133**	**1302_MW133_170807**	**07 Aug 2017**	**558368**	<0.01	<0.01	0.42	0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	72	82.23
		1302_MW133_170828	**28 Aug 2017**	**561086**	<0.01	<0.01	0.37	0.04	<0.01	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	60	68.71
		1302_MW133_171115	**15 Nov 2017**	**573035**	<0.01	<0.01	0.17	0.04	<0.01	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	61.4	68.85
		1302_MW133_180112	**12 Jan 2018**	**580464**	<0.01	<0.01	0.27	0.07	<0.01	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	51.8	58.44
		QCMW16_180112	**12 Jan 2018**	**EB1801996**	<0.05	<0.05	0.38	0.08	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	45.7	52.40
		1302_QCMW15_180112	**12 Jan 2018**	**580464**	<0.01	<0.01	0.26	0.07	<0.01	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	54.3	60.93
		1302_MW133_180307	**07 Mar 2018**	**588753**	<0.01	<0.01	0.07	0.07	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	112	123.45
		1302_MW133_8_180508	**08 May 2018**	**598367**	<0.01	<0.01	0.05	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	33.8	38.33
		1302_MW133_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	0.38	0.1	<0.01	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	81	101.35
		1302_QCMW4_181213	**13 Dec 2018**	**EB1831109**	<0.05	<0.05	0.29	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	57.3	65.00
		1302_QCMW3_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	0.42	0.12	<0.01	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	133	146.50
		1302_MW133_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	0.08	0.04	<0.01	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	39.8	46.70
		1302_MW133_210506	**06 May 2021**	**ES2117036**	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	14.8	17.60

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_MW133_211111	11 Nov 2021	ES2141185	<0.05	<0.05	0.15	0.06	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	35.7	42.20
		1302_MW133_220308	08 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	36.7	42.20
		1302_MW133_221021	21 Oct 2022	ES2238035	<0.05	<0.05	0.14	0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	56	63.40
		1302_MW133_230315	15 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	37.4	42.90
		1302_MW133_231031	31 Oct 2023	ES2337724	<0.12	<0.05	0.12	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	37	41.60
		1302_MW133_240304	04 Mar 2024	ES2407635	<0.05	<0.05	<0.05	0.06	<0.05	0.07	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	43.5	49.60
	MW292	1302_205_MW04_170427	27 Apr 2017	544555	<0.3	<0.3	0.43	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	97	108.18
		1302_DUP02A_170427	27 Apr 2017	EB1708998	<0.05	<0.05	0.15	0.07	<0.05	0.18	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	75.8	87.80
		1302_DUP02_GW_170427	27 Apr 2017	544555	<0.3	<0.3	0.33	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	88	98.35
		1302_MW292_200414	16 Apr 2020	ES2012928	<0.05	<0.05	0.16	<0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	58	67.20
		1302_MW292_201104	04 Nov 2020	ES2039162	<0.05	<0.05	0.26	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	58.9	67.40
	MW302	1302_207_MW05_170427	27 Apr 2017	544555	<0.3	<0.3	0.32	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	72	91.22
		1302_207_MW05_170904	04 Sep 2017	562043	<0.01	<0.01	0.08	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	104	129.37
		1302_QC33MW_170904	04 Sep 2017	562043	<0.01	<0.01	0.08	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	99	128.11
		1302_207_MW05_171115	15 Nov 2017	573035	<0.01	<0.01	0.08	0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	108	135.32
		1302_207_MW05_180112	12 Jan 2018	580464	<0.01	<0.01	0.06	0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	64	84.71
		1302_207_MW05_180309	08 Mar 2018	588949	<0.01	<0.01	0.09	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	80	106.71
		1302_MW302_200529	29 May 2020	ES2018941	<0.05	<0.05	0.08	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	61	82.40
		1302_QC100_200529	29 May 2020	ES2018941	<0.05	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	53.6	73.00
	MW303	1302_207_MW04_170905	05 Sep 2017	562268	<0.01	<0.01	0.11	0.03	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	108	141.17
		1302_QC36MW_170905	05 Sep 2017	562268	<0.01	<0.01	0.11	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	107	140.96
		1302_207_MW04A_180125	25 Jan 2018	583667	<0.01	<0.01	0.09	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	49	61.86
		1302_207_MW04_181213	13 Dec 2018	633394	<0.01	<0.01	0.14	0.03	<0.01	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	129	162.75
		1302_207_MW04_190320	20 Mar 2019	646323	<0.01	<0.01	0.07	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	32	43.56
		1302_MW303_200414	16 Apr 2020	ES2012928	<0.05	<0.05	0.07	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	46.7	61.70
		1302_MW303_201103	03 Nov 2020	ES2039162	<0.05	<0.05	0.11	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	131	167.00
		1302_QC203_201103	03 Nov 2020	RN1294219	<0.02	<0.01	0.071	0.018	<0.01	0.014	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	56	75.45
		1302_QC103_201103	03 Nov 2020	ES2039162	<0.05	<0.05	0.11	<0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	121	157.00
		1302_MW303_210429	29 Apr 2021	ES2116496	<0.05	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	51.8	73.90
		1302_QC103_210429	29 Apr 2021	ES2116496	<0.05	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	61.4	85.00
		1302_QC203_210429	29 Apr 2021	ES2116496	<0.05	<0.05	0.07	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	64.7	87.90
		1302_MW303_211109	09 Nov 2021	ES2141185	<0.05	<0.05	0.11	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	95.6	134.00
		1302_MW303_220308	08 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	31.8	42.10
		1302_QC101_220308	08 Mar 2022	ES2208419	<0.05	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	32.9	45.10
		1302_MW303_220929	29 Sep 2022	ES2235227	<0.05	<0.05	0.1	<0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	81.3	116.00
		1302_MW303_230322	22 Mar 2023	ES2310999	<0.05	<0.05	0.07	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	54.9	77.10
		1302_MW303_231030	30 Oct 2023	ES2337724	<0.12	<0.05	0.05	<0.05	<0.05	0.06	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	93.7	122.00
		1302_MW303_240305	05 Mar 2024	ES2407635	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	38.2	53.60
North of FFF4 & FFF6	MW205	1302_MW205_171113	13 Nov 2017	572745	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.12	1.30
		1302_MW205_180112	12 Jan 2018	580464	<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	7.38
		1302_MW205_180306	06 Mar 2018	588389	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.9	5.87
		1302_MW205_181215	15 Dec 2018	633343	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9	10.55
		1302_MW205_190320	20 Mar 2019	646323	<0.01	<0.01	0.06	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5	6.40
		1302_MW205a_191217	17 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.83	6.78
		1302_MW205_191217	17 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.99	1.13
		1302_QC101_191217	17 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.05	1.20
		1302_QC104_191217	17 Dec 2019	ES1942302	<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	1.23
		1302_MW205_200414	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.65	0.72
		1302_QC200_200414	16 Apr 2020	RN1271840	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.7	0.78
		1302_QC100_200414	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.65	0.70
		1302_MW205_201103	03 Nov 2020	ES2039162	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.67	1.88
		1302_MW205_210429	29 Apr 2021	ES2116496	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.91	1.04
		1302_MW205_211110	10 Nov 2021	ES2141185	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.88	8.25
		1302_MW205_220310	10 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.01	5.21
		1302_MW205_220928	28 Sep 2022	ES2235227	<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	1.64
		1302_MW205_230314	14 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.04	3.82
		1302_MW205_231031	31 Oct 2023	ES2337724	<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	7.06
		1302_MW205_240320	20 Mar 2024	ES2409473	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.39	1.65
1302	MW297	1302_206_MW05_170901	01 Sep 2017	561531	<0.01	<0.01	<0.05	0.03	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	28	32.79
		1302_QC25MW_170901	01 Sep 2017	EM1712005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	16.4	19.20
		1302_206_MW05_190320	20 Mar 2019	646323	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.8	6.88
		1302_MW297_191216	17 Dec 2019	ES1942302	<0.05	<0.05	0.06	0.08	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	76.3	91.00

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_MW297_200414	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.78	11.20
		1302_MW297_201104	**02 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	30.6	34.40
		1302_MW297_210429	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.6	4.19
		1302_MW297_211111	**11 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	38.1	47.10
		1302_MW297_220308	**08 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.44	1.63
		1302_MW297_220929	**29 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	41.8	48.50
		1302_MW297_230314	**14 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.02	2.43
		1302_MW297_231031	**30 Oct 2023**	**ES2337724**	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	39	44.00
		1302_MW297_240304	**04 Mar 2024**	**ES2407635**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.42	1.56
North of FFF5	**MW112**	**1302_MW112_170803**	**03 Aug 2017**	**557384**	<0.01	<0.01	<0.05	0.03	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	24.5	28.43
		1302_QCGW2_170803	**03 Aug 2017**	**EM1710451**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	11.9	13.80
		1302_MW112_170824	**24 Aug 2017**	**560518**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	20.7	24.18
		1302_MW112_171113	**13 Nov 2017**	**572745**	<0.01	<0.01	<0.05	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	19.9	23.45
		1302_MW112_180112	**12 Jan 2018**	**580464**	<0.01	<0.01	<0.05	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	18.4	21.28
		1302_MW112_180306	**06 Mar 2018**	**588389**	<0.01	<0.01	<0.05	0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.5	13.03
		1302_MW112_181215	**15 Dec 2018**	**633343**	0.05	<0.01	<0.05	0.03	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	28.5	32.51
		1302_MW112_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	<0.05	0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8.5	10.38
		QCGW03	**20 Mar 2019**	**EB1907348**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.92	11.40
		1302_QCGW02_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	<0.05	0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9	10.94
		1302_MW112_191217	**17 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	17.6	20.80
		1302_QC102_191217	**17 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	19.6	22.80
		1302_MW112_200414	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	17.1	20.60
		1302_MW112_201103	**03 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	20.3	23.50
		1302_QC202_201103	**03 Nov 2020**	**RN1294219**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	10.5	12.52
		1302_QC102_201103	**03 Nov 2020**	**ES2039162**	<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	23.00
		1302_MW112_210428	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	12.9	15.60
		1302_MW112_211110	**10 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	0.06	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	21.8	25.20
		1302_MW112_220310	**10 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.14	11.20
		1302_MW112_221010	**10 Oct 2022**	**ES2236478**	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	17.9	20.40
		1302_QC200_221010	**10 Oct 2022**	**RN1369431**	<0.02	<0.01	<0.01	0.023	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	8.7	10.06
		1302_QC100_221010	**10 Oct 2022**	**ES2236478**	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	17.6	20.10
		1302_MW112_230314	**14 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.23	9.74
FFTA1	**MW139**	**1302_MW139_170724**	**24 Jul 2017**	**555927**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.06	5.73
		1302_MW139_170828	**28 Aug 2017**	**561082**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6.4	7.22
		1302_MW139_171115	**15 Nov 2017**	**573035**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.7	6.48
		1302_MW139_180112	**12 Jan 2018**	**580464**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.54	1.74
		1302_MW139_180307	**07 Mar 2018**	**588753**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.56	0.60
		1302_MW139_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.02	4.50
		1302_MW139_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.59	0.65
		1302_MW139_191217	**17 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.31	2.67
		1302_MW139_200414	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.71	0.76
		1302_MW139_201104	**02 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.17	2.47
		1302_MW139_210506	**06 May 2021**	**ES2117036**	<0.05	<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
		1302_MW139_211110	**10 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.26	2.63
		1302_MW139_220309	**09 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.41	0.44
		1302_MW139_220929	**29 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.94	2.29
		1302_MW139_230322	**22 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.56	0.59
		1302_MW139_231030	**30 Oct 2023**	**ES2337724**	<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	1.79
		1302_MW139_240305	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.30
		1302_MW139_240318	**18 Mar 2024**	**1079850**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.34	0.35
	MW422	**1302_MW422_191217**	**17 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	59.2	79.10
		1302_MW422_200414	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	81.6	105.00
		1302_MW422_201102	**02 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	74.3	96.20
		1302_MW422_210506	**06 May 2021**	**ES2117036**	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	73.8	97.00
		1302_MW422_211110	**10 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	73	100.00
		1302_MW422_220309	**09 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	328	521.00
	MW502**	**1302_MW422_240305**	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.96	9.29
CFTA	**MW240**	**1302_243_MW02_170424**	**24 Apr 2017**	**543991**	<0.01	<0.01	0.41	1.3	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	29.7	50.89
		1302_243_MW02_170822	**22 Aug 2017**	**560107**	<0.01	<0.01	0.62	2	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	59	90.09
		1302_243_MW02_180112	**12 Jan 2018**	**580464**	<0.01	<0.01	0.84	4.6	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	99	147.49
		1302_243_MW02A_180131	**31 Jan 2018**	**583667**	<0.01	0.01	2.1	5.1	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	150	291.67
		1302_243_MW02_180308	**08 Mar 2018**	**588968**	<0.01	<0.01	0.45	2.3	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	39	68.88

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_243_MW02_6_180508	08 May 2018	598367	<0.01	<0.01	0.2	0.89	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	20	35.39
		1302_243_MW02_190320	20 Mar 2019	646323	<0.01	<0.01	0.19	0.96	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	22.3	40.50
		1302_MW240_200414	16 Apr 2020	ES2012928	<0.05	<0.05	0.51	2.37	<0.05	0.11	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	35.1	59.10
		1302_MW240_201103	03 Nov 2020	ES2039162	<0.05	<0.05	0.83	3.21	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	102	144.00
		1302_MW240_201210	10 Dec 2020	763330	<0.01	<0.01	0.46	1.5	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	51	79.41
		1302_MW240_210301	01 Mar 2021	778121	<0.01	<0.01	0.65	3.4	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	52	102.72
		1302_MW240_210429	29 Apr 2021	ES2116496	<0.05	<0.05	0.48	2.21	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	38.1	67.20
		1302_MW240_220309	09 Mar 2022	ES2208419	<0.05	<0.05	0.32	2.43	<0.05	0.07	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	26.5	51.70
		1302_MW240_230323	23 Mar 2023	ES2310999	<0.05	<0.05	0.38	1.96	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	24.7	44.80
		1302_MW240_240304	04 Mar 2024	ES2407635	<0.05	<0.05	0.21	1.8	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	19.6	35.70
		1302_MW240_240320	20 Mar 2024	1080327	<0.01	<0.01	0.29	1.2	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	19.6	35.05
	MW241	1302_243_MW03_170424	24 Apr 2017	543991	<0.01	<0.01	0.33	0.59	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	23.3	40.07
		1302_243_MW03_180112	12 Jan 2018	580464	<0.01	<0.01	0.25	0.82	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	28.5	43.69
		1302_243_MW03_180308	08 Mar 2018	588968	<0.01	<0.01	0.3	0.82	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	23.7	42.62
		1302_243_MW03_190320	20 Mar 2019	646323	<0.01	<0.01	0.13	0.39	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	12.3	26.21
		1302_MW241_200414	16 Apr 2020	ES2012928	<0.05	<0.05	0.12	0.31	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	11.1	19.00
		1302_MW241_201103	03 Nov 2020	ES2039162	<0.05	<0.05	<0.05	0.11	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	22	35.50
		1302_MW241_201210	10 Dec 2020	763330	<0.01	<0.01	0.11	0.15	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	12.8	22.54
		1302_MW241_210302	02 Mar 2021	778121	<0.01	<0.01	0.29	0.73	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	14.4	40.33
		1302_QC101_210302	02 Mar 2021	778121	<0.01	<0.01	0.33	0.72	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	22	49.83
		1302_MW241_210429	29 Apr 2021	ES2116496	<0.05	<0.05	0.09	0.31	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.2	21.80
		1302_MW241_220309	09 Mar 2022	ES2208419	<0.05	<0.05	0.37	1.32	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	25.3	45.20
		1302_QC201_220309	09 Mar 2022	RN1346368	<0.02	<0.01	0.35	0.75	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	15.9	28.05
		1302_QC102_220309	09 Mar 2022	ES2208419	<0.05	<0.05	0.36	1.26	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	24.6	44.40
		1302_MW241_230323	23 Mar 2023	ES2310999	<0.05	<0.05	0.25	1.41	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	27	44.70
		1302_MW241_240305	05 Mar 2024	ES2407635	<0.05	<0.05	0.21	0.99	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	19.6	32.60
On-Base - West	MW451	1302_MW451_201210	10 Dec 2020	763330	<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	<0.1
		1302_MW451_4.5_210301	01 Mar 2021	778121	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.5	3.95
		1302_QC202_210301	01 Mar 2021	EM2103767	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.06	2.13
		1302_MW451_220308	08 Mar 2022	ES2208419	<0.05	<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
		1302_MW451_220928	28 Sep 2022	ES2235227	<0.05	<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
		1302_MW451_230323	23 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.38	2.73
		1302_MW451_231030	30 Oct 2023	ES2337724	<0.05	<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
		1302_MW451_240305	05 Mar 2024	ES2407635	<0.05	<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
	MW452	1302_MW452_201210	10 Dec 2020	763330	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.8	5.41
		1302_MW452_3.0_210301	01 Mar 2021	778121	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.3	4.89
		1302_QC102_210301	01 Mar 2021	778121	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.6	5.24
		1302_MW452_220308	08 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.75	3.20
		1302_MW452_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.33	4.84
		1302_QC102_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.66	6.40
		1302_MW452_230323	23 Mar 2023	ES2310999	<0.05	<0.05	0.63	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.74	6.59
		1302_MW452_231030	30 Oct 2023	ES2337724	<0.05	<0.05	0.14	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.76	4.56
		1302_MW452_240305	05 Mar 2024	ES2407635	<0.05	<0.05	0.1	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.94	3.91
		1302_MW452_240318	18 Mar 2024	1079850	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.95	2.51
	MW405	1031MWBLD33-SOUTH_170824	24 Aug 2017	560518	<0.01	<0.01	0.36	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.3	11.16
		1302_BLD33-STH_171113	13 Nov 2017	572745	<0.01	<0.01	0.3	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6.2	7.67
		1302_BLD33-STH_180112	12 Jan 2018	580464	<0.01	<0.01	0.21	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	42.2	46.03
		1301_BLD33_SOUTGA_180202	02 Feb 2018	583667	<0.01	<0.01	0.07	0.03	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	17.1	20.24
		1302_BLD33_STH_180306	06 Mar 2018	588389	<0.01	<0.01	<0.05	0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.03	2.4
		1302_BLD33_STH_181215	15 Dec 2018	633343	<0.01	<0.01	0.3	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.8	13.15
		1302_BLD33_SOUTH_190320	20 Mar 2019	646323	<0.01	<0.01	0.15	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	34.7	40.32
		1302_QCMW24_180202	02 Feb 2018	EB1803787	<0.05	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	20.6	23.1
		1302_MW405_191217	17 Dec 2019	ES1942302	<0.05	<0.05	0.28	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.72	5.95
		1302_MW405_200414	16 Apr 2020	ES2012928	<0.05	<0.05	0.13	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	22.8	26.8
On-Base - North west	MW453	1302_MW453_201210	10 Dec 2020	763330	<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	0.44
		1302_MW453_210301	01 Mar 2021	778121	<0.01	<0.01	0.17	0.03	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.45	12.63
		1302_MW453_220309	09 Mar 2022	ES2208419	<0.05	<0.05	0.29	0.11	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.18	23.40
		1302_MW453_230323	23 Mar 2023	ES2310999	<0.05	<0.05	0.53	0.18	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	12.6	34.80
		1302_MW453_240319	19 Mar 2024	ES2409473	<0.05	<0.05	0.28	0.15	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	10.2	25.60
		1302_MW453_240320	20 Mar 2024	1080327	<0.01	<0.01	0.21	0.11	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.9	20.82
		1302_QC105_240320	20 Mar 2024	1080327	<0.01	<0.01	0.22	0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.2	19.66
On-Base - South east	MW454	1302_MW454_201210	10 Dec 2020	763330	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	48	60.04

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_MW454_2.6_210226	**26 Feb 2021**	**778121**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	84	95.61
		1302_QC103_210226	**26 Feb 2021**	**778121**	<0.01	<0.01	0.26	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.26
		1302_MW454_220309	**09 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	36.2	48.60
		1302_MW454_220929	**29 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	43.2	55.70
		1302_MW454_230322	**22 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	40.8	48.90
		1302_QC202_230322	**22 Mar 2023**	**RN1389152**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	22.2	27.51
		1302_QC102_230322	**22 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	40.9	49.30
		1302_MW454_231031	**31 Oct 2023**	**ES2337724**	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	38.3	47.70
		1302_MW454_240305	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	27.4	34.40
Southern boundary of Base	**MW141**	**1302_MW141_170724**	**24 Jul 2017**	**555927**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.29	0.31
		1302_MW141_170828	**28 Aug 2017**	**561082**	<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	0.28
		1302_MW141_180307	**07 Mar 2018**	**588753**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	0.23
		1302_MW141_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.4	0.42
		1302_MW141_190320	**20 Mar 2019**	**646323**	<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	0.27
		1302_MW141_191217	**19 Dec 2019**	**ES1942302**	<0.05	<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
		1302_MW141_200414	**16 Apr 2020**	**ES2012928**	<0.05	<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
		1302_MW141_201102	**02 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.45	0.45
		1302_MW141_210506	**06 May 2021**	**ES2117036**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.30
		1302_MW141_211110	**10 Nov 2021**	**ES2141185**	<0.05	<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
		1302_MW141_220309	**09 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.29
		1302_QC103_220309	**09 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.33	0.33
		1302_MW141_220929	**29 Sep 2022**	**ES2235227**	<0.05	<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
		1302_MW141_230322	**22 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.45	0.45
		1302_MW141_231030	**30 Oct 2023**	**ES2337724**	<0.05	<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
		1302_MW141_240305	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.30
		1302_MW141_240318	**18 Mar 2024**	**1079850**	<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	0.29
	MW144	**1302_MW144_170724**	**24 Jul 2017**	**555927**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.9	5.84
		1302_MW144A_170815	**15 Aug 2017**	**558955**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.5	6.66
		1302_MW144_170828	**28 Aug 2017**	**561082**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.2	6.18
		1302_MW144_171115	**15 Nov 2017**	**573035**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.4	6.39
		1302_MW144_180111	**11 Jan 2018**	**580283**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.9	5.77
		1302_MW144_180307	**07 Mar 2018**	**588753**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.55	3.02
		1302_MW144_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.9	9.16
		1302_MW144_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.8	3.51
		1302_MW144_191216	**16 Dec 2019**	**ES1942302**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.8	5.70
		1302_MW144_200414	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.75	3.33
		1302_MW144_201103	**03 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.87	8.03
		1302_MW144_210429	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.69	4.37
		1302_MW144_211110	**09 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.71	6.83
		1302_QC201_211110	**10 Nov 2021**	**RN1334898**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	4.3	5.10
		1302_QC101_211110	**10 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.24	6.41
		1302_MW144_220309	**09 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.15	2.69
		1302_MW144_220929	**28 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.55	5.46
		1302_QC201_220929	**29 Sep 2022**	**RN1368680**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	3.5	4.13
		1302_QC101_220929	**29 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.62	5.63
		1302_MW144_230420	**20 Apr 2023**	**ES2312996**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.75	4.62
		1302_QC200_230420	**20 Apr 2023**	**RN1391071**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	1.72	2.15
		1302_QC100_230120	**20 Apr 2023**	**ES2312996**	<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	4.44
		1302_MW144_231030	**30 Oct 2023**	**ES2337724**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.6	5.45
		1302_QC200_231030	**30 Oct 2023**	**RN1410783**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	3.1	3.83
		1302_QC100_231030	**30 Oct 2023**	**ES2337724**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.86	4.61
		1302_MW144_240305	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.94	2.36
		1302_MW144_240319	**19 Mar 2024**	**1079850**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.76	2.10
Western boundary of Base	**MW148**	**1302_MW148_170807**	**07 Aug 2017**	**558368**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.2	8.48
		1302_MW148A_170824	**24 Aug 2017**	**560519**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8.8	10.02
		1302_MW148B_170824	**24 Aug 2017**	**560519**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.3	8.43
		1302_MW148C_170824	**24 Aug 2017**	**560519**	<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	12.48
		1302_QC3_170824	**24 Aug 2017**	**565303**	<0.01	<0.01	<0.1	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.7	5.56
		1302_MW148_170901	**01 Sep 2017**	**561891**	<0.01	<0.01	0.06	0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8	9.38
		QC4_170824	**27 Sep 2017**	**EB1720018**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.84	8.90
		1302_MW148_171116	**16 Nov 2017**	**573039**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.1	11.25
		1302_MW148_180115	**15 Jan 2018**	**580450**	<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	11.54

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		QCMW20_180115	15 Jan 2018	EB1801996	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.83	9.08
		1302_QCMW19_180115	15 Jan 2018	580450	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8.4	9.62
		1302_MW148_180308	08 Mar 2018	588759	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.2	11.40
		1302_MW148_4_180509	09 May 2018	598367	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.2	10.66
		1302_MW148_181213	13 Dec 2018	633394	<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	12.22
		1302_MW148_190320	20 Mar 2019	646323	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7	8.22
		1302_MW148_191217	17 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.94	8.06
		1302_QC203_191217	17 Dec 2019	RN1259171	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	5	5.85
		1302_QC103_191217	17 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.1	8.30
		1302_MW148_200414	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.2	8.33
		1302_MW148_201103	03 Nov 2020	ES2039162	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.62	11.00
		1302_MW148_201212	12 Dec 2020	763330	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8.5	9.54
		1302_MW148_210225	25 Feb 2021	778121	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8	9.04
		1302_QC202_210225	25 Feb 2021	EM2103767	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.47	6.31
		1302_MW148_210506	06 May 2021	ES2117036	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.45	7.82
		1302_MW148_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.56	9.57
		1302_MW148_230323	23 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.74	9.72
		1302_MW148_231030	30 Oct 2023	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.79	8.81
		1302_MW148_240305	05 Mar 2024	ES2407635	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.03	5.85
		1302_MW148_240318	18 Mar 2024	1079850	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.3	6.20
	MW201	1302_MW201_170901	01 Sep 2017	561891	<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	<0.1
		1302_MW201_180308	08 Mar 2018	588759	<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	<0.1
		1302_MW201_211111	11 Nov 2021	ES2141185	<0.05	<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
		1302_MW201_220308	08 Mar 2022	ES2208419	<0.05	<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
Rapid Creek - Eastern end	MW156	1302_MW156_170807	07 Aug 2017	558368	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8	9.44
		1302_MW156A_170823	23 Aug 2017	560308	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.9	9.27
		1302_MW156_170905	05 Sep 2017	562268	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.2	10.62
		QC4_170823	27 Sep 2017	EB1720018	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.21	5.23
		1302_MW156_171114	14 Nov 2017	572746	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	11.5	12.97
		1302_MW156_180111	11 Jan 2018	580283	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.5	8.67
		1302_MW156A_180130	30 Jan 2018	583667	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.4	8.59
		1302_MW156_180307	07 Mar 2018	588753	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	12.3	14.47
		1302_QCMW12_180307	07 Mar 2018	EB1806472	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.69	11.70
		1302_QCMW11_180307	07 Mar 2018	588753	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	11.9	14.03
		1302_MW156_3_180508	08 May 2018	598367	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	11.7	14.10
		1302_MW156_181213	13 Dec 2018	633394	0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8.1	9.66
		1302_MW156_190320	20 Mar 2019	646323	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.1	8.35
		1302_MW156_191217	17 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.17	1.34
		1302_MW156_200414	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.58
		1302_MW156_201103	03 Nov 2020	ES2039162	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.47	0.49
		1302_MW156_201212	12 Dec 2020	763330	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.31	1.49
		1302_MW156_210225	25 Feb 2021	778121	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.89	0.98
		1302_MW156_210429	29 Apr 2021	ES2116496	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.78	5.49
		1302_MW156_211110	10 Nov 2021	ES2141185	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.79	5.66
		1302_MW156_220310	10 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.26	8.86
		1302_MW156_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.76	5.56
		1302_MW156_230314	14 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.72	10.50
		1302_MW156_231031	31 Oct 2023	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.25	6.09
		1302_MW156_240320	20 Mar 2024	ES2409473	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.91	10.40
Off-Base Monitoring Wells																		
Off-Base - South	MW176	1302_MW176_170905	05 Sep 2017	562266	<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
		1302_MW176_180307	07 Mar 2018	588758	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.13
		1302_MW176_190321	21 Mar 2019	646787	<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	0.10
		1302_MW176_201104	04 Nov 2020	ES2039162	<0.05	<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
		1302_MW176_210428	28 Apr 2021	ES2116496	<0.05	<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
		1302_MW176_211111	11 Nov 2021	ES2141185	<0.05	<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
		1302_QC103_211111	11 Nov 2021	ES2141185	<0.05	<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
		1302_QC203_211111	11 Nov 2021	ES2141185	<0.05	<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
		1302_MW176_220308	08 Mar 2022	ES2208419	<0.05	<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
		1302_MW176_220929	29 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.23
		1302_MW176_230320	20 Mar 2023	ES2310999	<0.05	<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
		1302_QC201_230320	20 Mar 2023	RN1389152	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.093	0.09

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_QC101_230320	20 Mar 2023	ES2310999	<0.05	<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
		1302_MW176_231031	31 Oct 2023	ES2337724	<0.05	<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
		1302_QC201_231031	31 Oct 2023	RN1410783	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.025	0.03
		1302_QC101_231031	31 Oct 2023	ES2337724	<0.05	<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
		1302_MW176_240305	05 Mar 2024	ES2407635	<0.05	<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
	MW180	1302_MW180_170906	06 Sep 2017	562310	<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	<0.1
		1302_MW180_180307	07 Mar 2018	588758	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.13
		1302_MW180_181213	13 Dec 2018	633394	<0.01	<0.01	0.16	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	0.33
		1302_QCMW2_181213	13 Dec 2018	EB1831109	<0.05	<0.05	0.13	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.20
		1302_QCMW1_181213	13 Dec 2018	633394	<0.01	<0.01	0.27	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.47	0.79
		1302_MW180_190321	21 Mar 2019	646787	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		1302_MW180_191216	16 Dec 2019	ES1942302	<0.05	<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
		1302_MW180_200415	16 Apr 2020	ES2012928	<0.05	<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
		1302_MW180_201102	02 Nov 2020	ES2039162	<0.05	<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
		1302_MW180_210428	28 Apr 2021	ES2116496	<0.05	<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
		1302_MW180_211110	10 Nov 2021	ES2141185	<0.05	<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
		1302_MW180_220308	08 Mar 2022	ES2208419	<0.05	<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
		1302_MW180_220929	29 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.27	0.31
		1302_MW180_230320	20 Mar 2023	ES2310999	<0.05	<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
		1302_QC200_230320	20 Mar 2023	RN1389152	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.065	0.07
		1302_QC100_230320	20 Mar 2023	ES2310999	<0.05	<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
		1302_MW180_231031	31 Oct 2023	ES2337724	<0.05	<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
		1302_MW180_240305	05 Mar 2024	ES2407635	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.28
		1302_MW180_240318	18 Mar 2024	1079850	<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	<0.1
	MW200	1302_MW200_170905	05 Sep 2017	562266	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.72	2.08
		1302_MW200_171117	17 Nov 2017	573308	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.34	2.73
		1302_MW200_180115	15 Jan 2018	580450	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.05	2.44
		1302_MW200_180307	07 Mar 2018	588758	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.62	0.68
		1302_MW200_181213	13 Dec 2018	633394	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.1	4.72
		1302_MW200_190321	21 Mar 2019	646787	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.46	1.79
		1302_MW200_191216	16 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.55	1.83
		1302_QC200_191216	16 Dec 2019	RN1259171	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	1.54	1.80
		1302_QC100_191216	16 Dec 2019	ES1942302	<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	1.94
		1302_MW200_200415	16 Apr 2020	ES2012928	<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	2.07
		1302_QC202_200415	16 Apr 2020	RN1271840	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	1.29	1.47
		1320_QC102_200415	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.92	2.23
		1302_MW200_201102	02 Nov 2020	ES2039162	<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	1.84
		1302_QC201_201102	02 Nov 2020	RN1294219	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	7.4	9.44
		1302_MW200_210428	28 Apr 2021	ES2116496	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.46	1.69
		1302_MW200_211111	11 Nov 2021	ES2141185	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.78	2.17
		1302_MW200_220308	08 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.61	0.71
		1302_MW200_220929	29 Sep 2022	ES2235227	<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	2.95
		1302_MW200_230320	20 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.76	0.84
		1302_MW200_231031	31 Oct 2023	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.52	1.82
		1302_MW200_240305	05 Mar 2024	ES2407635	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.5	0.54
	MW209	1302_MW209_171117	17 Nov 2017	573308	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.36	0.38
		1302_MW209_180115	15 Jan 2018	580450	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.26	0.28
		1302_MW209_180307	07 Mar 2018	588758	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	0.24
		1302_MW209_181213	13 Dec 2018	633394	<0.01	<0.01	0.23	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.58	0.86
		1302_MW209_190321	21 Mar 2019	646787	<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	0.30
		*1302_MW211_191216	16 Dec 2019	ES1942302	<0.05	<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
		*1302_MW211_200414	16 Apr 2020	ES2012928	<0.05	<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
		*1302_MW191_201103	03 Nov 2020	ES2039162	<0.05	<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
		*1302_MW211_210428	28 Apr 2021	ES2116496	<0.05	<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
		1302_MW209_211110	10 Nov 2021	ES2141185	<0.05	<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
		1302_MW209_220308	08 Mar 2022	ES2208419	<0.05	<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
		1302_MW209_220928	28 Sep 2022	ES2235227	<0.05	<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
		1302_QC101_220928	28 Sep 2022	ES2235227	<0.05	<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
		1302_MW209_230320	20 Mar 2023	ES2310999	<0.05	<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
		1302_MW209_231031	31 Oct 2023	ES2337724	<0.05	<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
		1302_MW209_240305	05 Mar 2024	ES2407635	<0.05	<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
Off-Base - North	MW185	1302_MW185_170905	05 Sep 2017	562266	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.1

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_MW185_171116	16 Nov 2017	573039	<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	<0.1
		1302_MW185_180115	15 Jan 2018	580450	<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	<0.1
		1302_MW185_180322	22 Mar 2018	590910	<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	<0.1
		1302_MW185_181213	13 Dec 2018	633394	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.7	0.93
		1302_MW185_190218	18 Feb 2019	641086	<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	0.23
		1302_QCMW01_190218	18 Feb 2019	EB1904669	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.26	0.28
		1302_QCMW02_190218	18 Feb 2019	641086	<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	0.34
		1302_MW185_190321	21 Mar 2019	646787	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		1302_MW185_191216	16 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.36	0.53
		1302_MW185_201102	02 Nov 2020	ES2039162	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.6	0.76
		1302_MW185_210428	28 Apr 2021	ES2116496	<0.05	<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
		1302_MW185_211111	11 Nov 2021	ES2141185	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.23
		1302_MW185_220308	08 Mar 2022	ES2208419	<0.05	<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
		1302_MW185_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.38	0.50
		1302_MW185_230320	20 Mar 2023	ES2310999	<0.05	<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
		1302_MW185_231031	31 Oct 2023	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.49
		1302_QC202_231031	31 Oct 2023	RN1410783	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.298	0.38
		1302_QC102_231031	31 Oct 2023	ES2337724	<0.05	<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
		1302_MW185_240305	05 Mar 2024	ES2407635	<0.05	<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
	MW189	1302_MW189_170905	05 Sep 2017	562266	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	0.10
		1302_MW189_180309	08 Mar 2018	588949	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		1302_MW189_200417	23 Apr 2020	ES2013815	<0.05	<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
		1302_QC100_200417	17 Apr 2020	ES2013815	<0.05	<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
Off-Base - West	MW210	1302_MW210_171116	16 Nov 2017	573039	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	0.28	<0.05	4.31	5.05
		1302_MW210_180115	15 Jan 2018	580450	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.58	2.95
		1302_MW210_180308	08 Mar 2018	588759	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.52	1.70
		1302_MW210_181213	13 Dec 2018	633394	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.93	3.05
		1302_MW210_190321	21 Mar 2019	646787	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.93	2.21
		1302_MW210_191216	16 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.83	3.29
		1302_MW210_200415	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.4	3.96
		1302_MW210_201102	02 Nov 2020	ES2039162	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.99	4.60
		1302_MW210_210428	28 Apr 2021	ES2116496	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.28	5.01
		1302_MW210_211111	11 Nov 2021	ES2141185	<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	1.68
		1302_MW210_220308	08 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.32	1.53
		1302_MW210_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.87	3.35
		1302_MW210_230320	20 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.91	2.10
		1302_MW210_231031	31 Oct 2023	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.29	3.71
		1302_MW210_240305	05 Mar 2024	ES2407635	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.99	2.28
Off-Base - South west	MW211	1302_MW211_171116	16 Nov 2017	573039	<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	<0.1
		1302_MW211_180115	15 Jan 2018	580450	<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	<0.1
		1302_MW211_180308	08 Mar 2018	588759	<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	<0.1
		1302_MW211_181213	13 Dec 2018	633394	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		1302_MW211_190321	21 Mar 2019	646787	<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	<0.1
		*1302_MW209_191216	16 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.33	0.33
		*1302_MW209_200415	16 Apr 2020	ES2012928	<0.05	<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
		1302_MW211_201103	03 Nov 2020	ES2039162	<0.05	<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
		*1302_MW209_201212	12 Dec 2020	763330	<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	<0.1
		*1302_MW209_210428	28 Apr 2021	ES2116496	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.03
		1302_MW211_211111	11 Nov 2021	ES2141185	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.36	0.36
		1302_MW211_220308	08 Mar 2022	ES2208419	<0.05	<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
		1302_MW211_220929	29 Sep 2022	ES2235227	<0.05	<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
		1302_QC200_220929	29 Sep 2022	RN1368680	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.02	0.67
		1302_QC100_220929	29 Sep 2022	ES2235227	<0.05	<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
		1302_MW211_230320	20 Mar 2023	ES2310999	<0.05	<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
		1302_MW211_231031	31 Oct 2023	ES2337724	<0.05	<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
		1302_MW211_240305	05 Mar 2024	ES2407635	<0.05	<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
Rapid Creek	MW190	1302_MW190A_170830	30 Aug 2017	561291	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.4	4.09
		1302_MW190_170905	05 Sep 2017	562266	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.5	4.16
		1302_MW190_171116	16 Nov 2017	573039	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.1	4.68
		1302_MW190_180111	11 Jan 2018	580283	<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	3.90
		1302_MW190_180309	08 Mar 2018	588949	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.99	1.09
		1302_MW190_3_180509	09 May 2018	598367	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.7	3.23

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_MW190_7_180509	09 May 2018	598367	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.12
		1302_MW190_11_180509	09 May 2018	598367	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.45	0.51
		1302_MW190_211111	11 Nov 2021	ES2141185	<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	4.94
		1302_MW190_220308	08 Mar 2022	ES2208419	<0.05	<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
		1302_MW190_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.39	5.26
		1302_MW190_230320	20 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.49	0.52
		1302_MW190_231031	31 Oct 2023	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.85	2.29
		1302_MW190_240305	05 Mar 2024	ES2407635	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.30
	MW191	1302_MW191_170905	05 Sep 2017	562266	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.8	3.22
		1302_QC3MW_170905	11 Oct 2017	EB1720977	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.3	3.93
		1302_MW191_171116	16 Nov 2017	573039	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.9	4.42
		1302_MW191_180115	15 Jan 2018	580450	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.02	3.51
		1302_MW191_180309	08 Mar 2018	588949	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.43	2.78
		1302_MW191_4_180509	09 May 2018	598367	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.4	3.91
		1302_MW191_181213	13 Dec 2018	633394	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.9	4.41
		1302_QCMW6_181213	13 Dec 2018	EB1831109	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.47	2.83
		1302_QCMW5_181213	13 Dec 2018	633394	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.8	4.27
		1302_MW191_190321	21 Mar 2019	646787	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.61	3.02
		QCGW11_190321	21 Mar 2019	EB1907601	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.92	3.31
		1302_QCGW10_190321	21 Mar 2019	646787	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.63	3.07
		1302_MW191_191218	18 Dec 2019	ES1942302	<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	2.86
		1302_MW191_200415	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.91	2.24
		1302_QC203_200415	16 Apr 2020	RN1271840	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	2.03	2.32
		1302_QC103_200415	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.5	2.87
		*1302_MW209_201103	03 Nov 2020	ES2039162	<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	2.70
		1302_MW191_210428	28 Apr 2021	ES2116496	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.92	2.25
		1302_MW191_211111	11 Nov 2021	ES2141185	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.01	2.39
		1302_MW191_220308	08 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.07	2.50
		1302_MW191_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.18	3.67
		1302_MW191_230320	20 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.65	3.02
		1302_MW191_231031	31 Oct 2023	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.26	2.63
		1302_MW191_240305	05 Mar 2024	ES2407635	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.46	2.75
	MW193	1302_MW193_170905	05 Sep 2017	562266	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.1	4.84
		1302_QC2MW_170905	11 Oct 2017	EB1720977	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.86	5.97
		1302_MW193_171116	16 Nov 2017	573039	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.3	4.99
		1302_MW193_180115	15 Jan 2018	580450	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.8	4.51
		1302_MW193A_180205	05 Feb 2018	583667	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.15	1.36
		1302_MW193_180309	08 Mar 2018	588949	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.94	1.06
		1302_MW193_181213	13 Dec 2018	633394	<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	5.90
		1302_MW193_190321	21 Mar 2019	646787	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.1	3.85
		1302_MW193_191218	18 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.13	3.83
		1302_MW193_200415	16 Apr 2020	ES2012928	<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	1.47
		1302_MW193_201102	02 Nov 2020	ES2039162	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.95	1.08
		1302_MW193_210506	06 May 2021	ES2117036	<0.05	<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
	MW194	1302_MW194_170906	06 Sep 2017	562310	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.9	5.60
		1302_MW194_171116	16 Nov 2017	573039	<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	6.70
		1302_MW194A_180205	05 Feb 2018	583667	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.89	4.47
		1302_MW194_180309	08 Mar 2018	588949	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.91	4.44
		1302_MW194_181213	13 Dec 2018	633394	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.8	5.62
		1302_MW194_190321	21 Mar 2019	646787	<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	4.14
		1302_MW194_191218	18 Dec 2019	ES1942302	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.96	3.50
		1302_MW194_200415	16 Apr 2020	ES2012928	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.3	3.90
		1302_MW194_201102	02 Nov 2020	ES2039162	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.19	3.78
		1302_MW194_210506	06 May 2021	ES2117036	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.6	3.05
		1302_MW194_211111	11 Nov 2021	ES2141185	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.65	5.57
		1302_MW194_220308	08 Mar 2022	ES2208419	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.64	4.49
		1302_MW194_220928	28 Sep 2022	ES2235227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.84	4.60
		1302_MW194_230320	20 Mar 2023	ES2310999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.75	5.40
		1302_MW194_231031	31 Oct 2023	ES2337724	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.51	3.00
		1302_MW194_240305	05 Mar 2024	ES2407635	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.68	3.11
	MW195	1302_MW195_170906	06 Sep 2017	562310	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.23	1.44
		1302_MW195_171116	16 Nov 2017	573039	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.81	0.90

					PFAS - (n:2) Fluorotelomer Sulfonic Acids					PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water																	0.07	
PFAS NEMP 2020 Freshwater 99%																		
Location	**Location Code**	**Field ID**	**Date**	**Lab Report Number**														
		1302_MW195_180115	**15 Jan 2018**	**580450**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.86	2.21
		1302_MW195_180309	**08 Mar 2018**	**588949**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.18	1.32
		1302_MW195_181213	**13 Dec 2018**	**633394**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.97	2.29
		1302_MW195_190321	**21 Mar 2019**	**646787**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.32	1.68
		1302_MW195_191218	**18 Dec 2019**	**ES1942302**	<0.05	<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
		1302_MW195_200415	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.02	4.16
		1302_MW195_201102	**02 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.30
		1302_QC200_201102	**02 Nov 2020**	**RN1294219**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.214	0.21
		1302_QC100_201102	**02 Nov 2020**	**ES2039162**	<0.05	<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
		1302_MW195_210506	**06 May 2021**	**ES2117036**	<0.05	<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
		1302_MW195_211111	**11 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.77	2.07
		1302_MW195_220308	**08 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.20
		1302_MW195_220928	**28 Sep 2022**	**ES2235227**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.44	1.63
		1302_QC202_220928	**28 Sep 2022**	**RN1368680**	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	2.9	3.27
		1302_QC100_220928	**28 Sep 2022**	**ES2235227**	<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	1.09
		1302_MW195_230320	**20 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.27	1.41
		1302_MW195_231031	**31 Oct 2023**	**ES2337724**	<0.05	<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
		1302_MW195_240305	**05 Mar 2024**	**ES2407635**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.6	0.63
FFTA2 (DIA)	**MW197**	**1302_MW197_170907**	**07 Sep 2017**	**562496**	0.03	0.03	<0.05	0.03	0.02	<0.05	<0.05	<0.05	<0.05	0.15	<0.05	<0.05	6.3	8.36
		1302_MW197_180111	**11 Jan 2018**	**580283**	<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	11.23
		1302_MW197_180308	**08 Mar 2018**	**588968**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.8	12.4
		1302_MW197_181214	**14 Dec 2018**	**633343**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	12.4	14.07
		1302_MW197_190320	**20 Mar 2019**	**646323**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.4	11.06
		1302_MW197_200414	**16 Apr 2020**	**ES2012928**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.91	12.1
		1302_MW197_201103	**03 Nov 2020**	**ES2039162**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	23.2	25.7
		1302_MW197_210429	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	8.84	10.6
		1302_MW197_211109	**09 Nov 2021**	**ES2141185**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	9.61	11.2
		1302_MW197_220309	**09 Mar 2022**	**ES2208419**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.48	9.05
		1302_MW197_230323	**23 Mar 2023**	**ES2310999**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	7.2	8.4
		1302_MW197_240319	**22 Mar 2024**	**ES2409473**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.69	6.37

Notes:

* = MW209 and MW211 have historically been incorrectly labelled. Location ID's have been corrected in this table.

** = MW502 was sampled in March 2024 but incorrectly labelled as MW422

Environmental Standards

HEPA, January 2020, PFAS NEMP 2020 Drinking Water

HEPA, January 2020, PFAS NEMP 2020 Freshwater 99%

Location	Location Code	Sampled Date	DO (mg/L)	EC (µS/cm)	TDS (calc) (mg/L)^	pH	Redox (mV)	Redox corrected (mV)	Temp (°C)	Clarity	Flow	Turbidity	Water Colour	Odour	Sheen	Sample Method
On-Base Surface Water Sampling Locations																
Rapid Creek - Headwater south arm	**SW152**	17/01/2022	3.27	87.4	56.8	7.30	118.9	322.9	28.2	-	-	50.5	Colourless	Odourless	No Sheen	Grab Sample
		14/03/2022	6.17	69.6	45.2	5.56	84.7	285.0	33.1	-	-	-	-	-	-	-
		28/03/2023	3.91	51.8	33.7	5.73	98.1	298.1	27.2	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		6/03/2024	1.44	89.2	58.0	6.16	126.5	326.5	28.4	Moderate	Low	-	Light brown	No odour	Organic Sheen	Grab
CFTA	**SW156**	20/01/2021	**Location was to dry to sample**													
		17/01/2022	3.99	58.0	37.7	7.83	106.5	311.0	27.5		-	2.2	Colourless	Odourless	No Sheen	Grab Sample
		23/11/2022	-	78.5	51.0	5.72	38.4	238.4	34.3	Low	-	-	Brown	No odour	No Sheen	Grab
		28/03/2023	4.55	31.3	20.3	6.56	85.6	285.6	28.9	High	-	-	Colourless	No odour	No Sheen	Grab
		14/12/2023	1.65	24.9	16.2	5.70	74.2	274.2	27.5	Low	No	-	Brown	No odour	No Sheen	Grab
		6/03/2024	**Location was to dry to sample**													
Stormwater pipe from Airside operations	**SW160**	22/01/2020	5.10	15.6	10.1	7.40	188.9	393.9	25.1	-	-	-	-	-	-	-
		20/01/2021	**Location was to dry to sample**													
		17/01/2022	4.50	42.0	27.3	7.93	105.1	308.8	28.6		-	16.9	Colourless	Odourless	No Sheen	Grab Sample
		25/11/2022	1.20	40.9	26.6	5.30	-75.0	125.0	30.1	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		28/03/2023	3.07	44.8	29.1	6.26	99.6	299.6	29.5	High	-	-	Colourless	No odour	No Sheen	Grab
		14/12/2023	1.57	24.1	15.7	5.94	80.3	280.3	28.2	Low	Low	-	Brown	No odour	No Sheen	Grab
		6/03/2024	0.53	62.6	40.7	6.09	98.0	298.0	29.3	High	Low	-	Colourless	No odour	No Sheen	Grab
Southern boundary	**SW162**	20/01/2021	3.7	26.9	17.5	7.70	-	-	28.5	-	-	Slightly Turbid	Colourless	Odourless	No Sheen	Sampling Pole
		29/04/2021	2.58	48.6	31.6	5.62	127.4	332.4	32.8	-	No	NA	Colourless/clear	No odour	-	Sampling Pole.
		13/01/2022	3.69	50.7	33.0	6.77	118.6	320.2	31.4	-	-	15.1	Colourless	Odourless	No Sheen	Grab Sample
		14/03/2022	3.34	48.7	31.7	6.36	79.3	280.7	31.7	-	-	-	-	-	-	-
		25/11/2022	0.94	19.8	12.9	6.31	29.1	229.1	30.4	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		28/03/2023	3.94	24.9	16.2	6.29	102.6	302.6	25.6	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		13/12/2023	2.76	11.6	7.5	6.05	65.0	265.0	26.1	Low	High	-	Brown	No odour	No Sheen	Grab
		6/03/2024	1.37	51.2	33.3	6.01	131.1	331.1	28.2	Moderate	Low	-	Light brown	No odour	Organic Sheen	Grab
Eastern end of runway	**SW170**	20/01/2021	2.8	170.6	110.9	7.40	286.0	491.0	29.0	-	-	Slightly Turbid	Slight Grey Brown	Odourless	No Sheen	Sampling Pole
		26/02/2021	6.68	64.9	42.2	5.35	185.9	390.9	29.3	-	-	-	-	-	-	-
		29/04/2021	3.02	68.8	44.7	5.57	171.3	376.3	32.2	-	Minimal	NA	Colourless/clear	No odour		Sampling Pole.
		13/01/2022	3.56	90.9	59.1	6.67	94.9	296.4	31.6	-	-	-	Colourless	Odourless	No Sheen	Grab Sample
		14/03/2022	5.03	154.4	100.4	5.53	98.7	300.2	31.5	-	-	-	-	-	-	-
		24/11/2022	0.96	53.1	34.5	7.00	17.6	217.6	29.6.	Moderate	-	-	Browny Orange	No odour	No Sheen	Grab
		22/12/2022	5.30	37.8	24.6	6.37	163.3	363.3	26.0	High	-	-	Colourless	No odour	Sheen	Grab
		25/01/2023	3.50	95.3	61.9	5.72	161.3	361.3	29.8	Moderate	-	-	Pale brown	No odour	No Sheen	Grab
		21/02/2023	6.59	29.3	19.0	6.67	68.2	268.2	27.8	Moderate	-	-	pale brown	No odour	No Sheen	Grab
		28/03/2023	3.93	24.0	15.6	6.21	100.7	300.7	24.9	Moderate	-	-	Browny orange	No odour	No Sheen	Grab
		14/04/2023	0.48	49.9	32.4	6.80	83.9	283.9	27.8	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		13/12/2023*	2.9	33.6	21.8	5.84	71.5	271.5	26.4	Low	Low	-	Brown	No odour	No Sheen	Grab
		24/01/2024	6.00#	52.3	34.0	6.80	93.3	293.3	26.9	Low	Low	-	Brown	No odour	No Sheen	Grab
		15/02/2024	4.15	49.0	31.9	5.81	-	-	30.3	Low	Low	-	Light brown	No odour	No Sheen	Grab
		6/03/2024*	1.42	87.2	56.7	5.87	131.7	331.7	28.7	Low	Low	-	Brown	No odour	Organic Sheen	Grab
		30/04/2024	-	83.6	54.3	4.82	172.4	372.4	28.4	High	Pooled	-	Colourless	No odour	No Sheen	Grab
Drain near FFF5	**SW178**	20/01/2021	3.1	45.8	29.8	7.90	124.4	324.4	27.5	-	-	Slightly Turbid	Colourless	Lightly Organic	No Sheen	Sampling Pole
		17/01/2022	3.59	52.3	34.0	7.96	108.8	313.2	27.7		-	149.6	Colourless	Odourless	No Sheen	Grab Sample
		14/03/2022	5.38	55.1	35.8	6.75	84.5	287.2	29.9	-	-	-	-	-	-	-
		25/11/2022	-	67.9	44.1	6.79	7.2	207.2	29.0	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		28/03/2023	4.41	31.2	20.3	6.65	106.6	306.6	25.5	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		13/12/2023	2	17.7	11.5	6.05	61.8	261.8	26.8	Low	Moderate	-	Brown	No odour	No Sheen	Grab
		6/03/2024	1.46	42.4	27.6	6.79	123.5	323.5	28.0	Low	Low	-	Brown	No odour	No Sheen	Grab
Main drain to the North of FFF4 & FFF6	**SW181**	18/12/2020	4.98	97.8	63.6	8.46	-	-	31.7	-	-	-	-	-	-	-
		20/01/2021	3.8	170.6	110.9	7.40	-	-	7.9	-	-	Slightly Turbid	Colourless	Slightly Organic	No Sheen	Sampling Pole
		17/01/2022	4.28	95.0	61.8	7.82	105.5	309.7	27.9	-	-	34.3	Colourless	Odourless	No Sheen	Grab Sample
		14/03/2022	5.61	57.4	37.3	6.71	74.5	277.7	29.3	-	-	-	-	-	-	-
		25/11/2022	1.87	13.1	8.5	5.22	-70.0	130.0	31.0	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		28/03/2023	4.58	27.1	17.6	6.46	103.6	303.6	25.4	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		13/12/2023	1.97	9.5	6.2	5.82	62.4	262.4	26.7	Low	High	-	Brown	No odour	No Sheen	Grab
		6/03/2024	1.47	100.9	65.6	6.13	138.1	338.1	28.1	High	Low	-	Colourless	No odour	No Sheen	Grab
Drainage from FFTA1	**SW312**	22/12/2022	6.81	38.2	24.8	8.01	104.3	304.3	26.3	High	-	-	Colourless	No odour	Sheen	Grab
		25/01/2023	4.55	82.7	53.8	7.18	148.6	348.6	28.8	High	-	-	Colourless	No odour	No Sheen	Grab
		21/02/2023	6.59	24.9	16.2	6.40	63.5	263.5	28.3	High	-	-	Colourless	No odour	No Sheen	Grab
		28/03/2023	4.79	22.9	14.9	6.43	99.0	299.0	26.3	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		14/04/2023	0.61	29.0	18.9	6.89	48.3	248.3	27.8	High	-	-	Colourless	No odour	No Sheen	Grab
		13/12/2023	2.01	16.9	11.0	5.61	37.8	237.8	26.9	Low	High	-	Brown	No odour	No Sheen	Grab
		24/01/2024	6.40#	62.1	40.4	7.00	86.6	286.6	26.8	Low	Low	-	Brown	No odour	No Sheen	Grab
		15/02/2024	5.67	30.4	19.8	7.96	-	-	33.5	Moderate	Low	-	Light brown	No odour	No Sheen	Grab
		6/03/2024*	1.48	27.6	17.9	6.73	148.4	348.4	29.0	High	Pooled	-	Colourless	No odour	No Sheen	Grab
Off-Base Surface Water Sampling Locations																
Rapid Creek - Upstream of Weir	**SW104**	21/01/2020	3.60	40.2	26.1	6.45	207.3	412.3	29.8	-	-	-	-	-	-	-
		16/12/2020	3.6	23.3	15.1	8.00	150.5	350.5	29.3	-	-	Clear	Colourless	Odourless	No Sheen	Sampling Pole
		6/04/2021	2.22	69.5	45.2	6.81	259.4	464.4	29.0	-	No Observed	NA	Colourless/clear	No odour	-	Sampling Pole
		14/01/2022	3.29	90.2	58.6	6.81	177.9	380.1	30.6	-	-	14.7	Colourless	Odourless	No Sheen	Grab Sample
		23/11/2022	1.04	38.4	25.0	5.53	48.1	248.1	27.8	High	-	-	Colourless	No odour	No Sheen	Grab
		27/03/2023	2.3	29.9	19.4	5.37	67.2	267.2	31.6	High	-	-	Colourless	No odour	No Sheen	Grab
		13/12/2023	2.67	76.0	49.4	5.37	46.7	246.7	28.8	Low	No	-	Brown	No odour	No Sheen	Grab
		6/03/2024	3.50	88.0	57.2	5.43	137.5	337.5	30.5	High	Low	-	Colourless	No odour	No Sheen	Grab
Rapid Creek - Weir	**SW106**	21/01/2020	3.95	59.6	38.7	6.26	198.7	403.7	29.5	-	-	-	-	-	-	-
		16/12/2020	3.4	52.7	34.3	7.20	164.6	364.6	28.6	-	-	Clear	Colourless	Odourless	No Sheen	Sampling Pole
		28/04/2021	3.30	63.2	41.1	6.37	167.3	372.3	29.5	-	Moderate	No turbidity	Colourless/clear	No odour	-	Sampling Pole.
		14/01/2022	3.34	285.1	185.3	8.00	112.1	315.4	29.1	-	-	-0.3	Colourless	Odourless	No Sheen	Grab Sample
		15/03/2022	5.28	48.2	31.3	5.90	83.6	285.4	31.2	-	-	-	-	-	-	-
		23/11/2022	-	76.7	49.9	5.43	72.4	272.4	29.3	High	-	-	Colourless	No odour	No Sheen	Grab
		27/03/2023	3.95	46.2	30.0	6.26	53.3	253.3	30.4	High	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	3.67	40.2	26.1	7.06	48.9	248.9	26.2	Moderate	Low	-	Brown	No odour	No Sheen	Grab
		6/03/2024	1.86	66.9	43.5	6.28	105.0	305.0	29.2	High	Moderate	-	Colourless	No odour	No Sheen	Grab
Rapid Creek - Near Henry-Wrigley Drive	**SW108**	21/01/2020	3.50	63.2	41.1	6.14	183.3	388.3	28.6	-	-	-	-	-	-	-
		16/12/2020	4.7	42.4	27.6	7.00	178.1	378.1	28.0	-	-	Clear	Colourless	Odourless	No Sheen	Sampling Pole
		28/04/2021	3.99	61.2	39.8	5.78	217.8	422.8	27.8	-	-	No turbidity	Colourless/clear	No odour	-	Sampling Pole
		13/01/2022	3.50	59.9	38.9	5.99	162.3	365.5	29.2	-	-	3.5	Colourless	Odourless	No Sheen	Grab Sample
		15/03/2022	4.61	47.2	30.7	5.50	88.5	290.7	30.6	-	-	-	-	-	-	-
		23/11/2022	-	68.4	44.5	5.22	23.9	223.9	29.2	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		27/03/2023	4.08	47.6	30.9	5.69	74.8	274.8	29.9	High	-	-	Colourless	No odour	No Sheen	Grab
		14/12/2023	3.16	66.4	43.2	5.34	86.0	286.0	29.6	Moderate	-	-	Brown	No odour	No Sheen	Grab
		6/03/2024	1.68	63.4	41.2	5.82	119.5	319.5	29.0	Moderate	Moderate	-	Light brown	No odour	No Sheen	Grab
Rapid Creek - Near McMillan's Road	**SW109**	21/01/2020	3.80	65.3	42.4	6.09	161.2	366.2	28.2	-	-	-	-	-	-	-
		16/12/2020	4.00	39.4	25.6	6.50	187.7	387.7	28.6	-	-	Clear	Colourless	Slightly Organic	No Sheen	Sampling Pole
		26/02/2021	6.00	43.8	28.5	4.81	199.8	404.8	27.9	-	-	-	-	-	-	-
		28/04/2021	3.33	235.7	153.2	7.31	154.2	359.2	29.2	-	Moderate	No turbidity	Colourless/clear	No odour	-	Sampling Pole
		13/01/2022	3.15	65.8	42.8	6.07	153.1	356.1	29.5	-	-	1.3	Colourless	Odourless	No Sheen	Grab Sample
		14/03/2022	3.77	55.1	35.8	6.22	60.3	262.4	30.7	-	-	-	-	-	-	-
		30/06/2022	3.65	180.2	117.1	5.86	-215.4	-7.3	22.7	-	-	Low	Light brown	Odourless	No Sheen	Grab Sample
		26/08/2022	2.78	431.0	280.2	5.12	64.3	272.2	22.9	-	-	-	-	-	-	Grab Sample
		23/11/2022	-	75.9	49.3	5.71	49.3	249.3	29.6	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		22/12/2022	4.83	37.8	24.6	5.80	167.8	367.8	26.5	High	-	-	Colourless	No odour	Sheen	Grab
		25/01/2023	3.89	156.2	101.5	5.44	156.3	356.3	28.3	High	-	-	Colourless	No odour	No Sheen	Grab
		23/02/2023	6.45	41.9	27.2	6.17	53.9	253.9	29.4	High	-	-	Colourless	No odour	No Sheen	Grab
		27/03/2023	3.91	49.4	32.1	5.67	83.6	283.6	30.1	High	-	-	Colourless	No odour	No Sheen	Grab
		14/04/2023	4.72	45.3	29.4	5.69	83.2	283.2	28.4	High			Colourless	No odour	No Sheen	Grab
		30/08/2023	0.64	100.6	65.4	6.01	57.5	257.5	25.8	-	Moderate	-	Colourless	No odour	Natural Sheen	Grab
		6/12/2023	-	-	-	-	-	-	-	-	High	-	-	-	-	Grab
		24/01/2024	9.00#	85.7	55.7	7.60	56.6	256.6	27.4	Moderate	Moderate	-	Light brown	No odour	No Sheen	Grab
		15/02/2024	4.57	45.5	29.6	6.43	-	-	29.1	Low	High	-	Colourless	No odour	No Sheen	Grab
		6/03/2024	3.32	102.0	66.3	6.98	91.1	291.1	28.4	High	High	-	Colourless	No odour	No Sheen	Grab
		30/04/2024	2.48	49.3	32.0	5.81	157.6	357.6	28.9	High	Moderate	-	Colourless	No odour	No Sheen	Grab

Notes

DO = dissolved oxygen

EC = electrical conductivity

Redox = reduction oxidation

Temp = Temperature (°C)

^ = TDS values calculated by EC * 0.65

* = Location both in start/end of wet season event and mass flux

= Conversion made from DO% (Sat) to mg/L using USGS on-line calculator (https://water.usgs.gov/cgi-bin/dotables), BoM barometric pressure from 24/01/2024 and the machine reading for temperature and electrical conductivity.

- = not recorded

Location	Location Code	Sampled Date	DO (mg/L)	EC (µS/cm)	TDS (calc) (mg/L)^	pH	Redox (mV)	Redox corrected (mV)	Temp (°C)	Clarity	Flow	Turbidity	Water Colour	Odour	Sheen	Sample Method
Rapid Creek - Pipe Track	SW112	21/01/2020	4.20	1012.0	657.8	6.55	168.2	373.2	27.5	-	-	-	-	-	-	-
		16/12/2020	2.5	2877.0	1870.1	7.80	159.2	359.2	27.7	-	-	Clear	Colourless	Freshwater Odour	No Sheen	Sampling Pole
		28/04/2021	1.59	49282.0	32033.3	8.02	47.8	252.8	27.9	-	-	NA	Colourless/clear	Brackish	-	Sampling Pole
		14/01/2022	3.58	558.0	362.7	6.56	133.1	336.0	29.7	-	-	2.2	Colourless	Odourless	No Sheen	Grab Sample
		16/03/2022	7.50	760.0	494.0	7.28	57.4	260.9	28.9	-	-	-	-	-	-	-
		23/11/2022	-	13292.0	8639.8	7.20	19.8	219.8	31.1	High	-	-	Colourless	No odour	No Sheen	Grab
		28/03/2023	3.79	453.9	295.0	6.81	100.7	300.7	27.9	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	-	-	-	-	-	-	-	-	Low	-	-	-	-	Grab
		6/03/2024	5.16	240.4	156.3	6.16	127.0	327.0	29.9	High	Low	-	Colourless	No odour	No Sheen	Grab
Rapid Creek - Fishing Platform	SW113	21/01/2020	5.60	23899.0	15534.4	7.44	166.2	371.2	28.7	-	-	-	-	-	-	-
		22/01/2020	5.19	1372.0	891.8	7.39	169.6	374.6	26.1	-	-	-	-	-	-	-
		16/12/2020	3.0	23991.0	15594.2	7.10	190.1	390.1	28.7	-	-	Clear	Colourless	Slightly Saline	No Sheen	Sampling Pole
		28/04/2021	3.21	71125.0	46231.3	7.64	160.7	365.7	28.7	-	Swift	Slightly turbid	Colourless/clear	Brackish	-	Sampling Pole.
		14/01/2022	3.35	7296.0	4742.4	6.29	156.3	358.8	30.2	-	-	8.9	Colourless	Odourless	No Sheen	Grab Sample
		16/03/2022	4.71	18244.0	11858.6	7.43	119.4	322.1	30.0	-	-	-	-	-	-	-
		23/11/2022	0.45	49197.0	31978.1	7.88	-56.4	143.6	31.1	High	-	-	Colourless	No odour	No Sheen	Grab
		28/03/2023	4.03	8889.0	5777.9	6.79	127.1	327.1	28.5	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	-	-	-	-	-	-	-	-	Moderate	-	-	-	-	Grab
		6/03/2024	6.40	9761.0	6344.7	6.58	169.3	369.3	29.6	High	Moderate	-	Colourless	No odour	No Sheen	Grab
DIA drain to Rapid Creek - Near Dogs home	SW114	21/01/2020	4.60	32.9	21.4	6.50	188.8	393.8	28.8	-	-	-	-	-	-	-
		16/12/2020	4.0	75.2	48.9	8.10	130.8	330.8	29.9	-	-	Clear	Colourless	Slightly Organic	No Sheen	Sampling Pole
		28/04/2021	5.36	86.2	56.0	6.30	190.9	395.9	31.2	-	Low flow	No turbidity	Colourless/clear	No odour	-	Sampling Pole.
		14/01/2022	2.34	180.1	117.1	7.08	153.9	355.7	31.1	-	-	0.8	Colourless	Odourless	No Sheen	Grab Sample
		14/03/2022	4.09	45.0	29.3	4.98	91.0	292.2	32.0	-	-	-	-	-	-	-
		23/11/2022	-	15.9	10.3	5.70	72.9	272.9	31.6	High	-	-	Colourless	No odour	No Sheen	Grab
		27/03/2023	3.6	52.2	33.9	5.56	84.7	284.7	31.4	High	-	-	Colourless	No odour	Organic	Grab
		13/12/2023	3.66	105.4	68.5	6.98	2.6	202.6	29.1	Low	Low flow	-	Brown	No odour	No Sheen	Grab
		6/03/2024	3.49	70.0	45.5	6.48	120.7	320.7	30.7	High	Pooled	-	Colourless	No odour	No Sheen	Grab
DIA drain to Rapid Creek	SW115	21/01/2020	2.21	55.0	35.8	5.94	202.6	407.6	30.6	-	-	-	-	-	-	-
		16/12/2020	4.9	19.5	12.7	7.70	146.1	346.1	28.8	-	-	Clear	Colourless	Slightly Organic	No Sheen	Sampling Pole
		28/04/2021	1.13	113.3	73.6	6.00	153.0	358.0	32.0	-	No observable	NA	Colourless/clear	No odour	-	Sampling Pole.
		14/01/2022	2.40	52.1	33.9	8.25	104.8	307.9	29.4	-	-	3.9	Colourless	Odourless	No Sheen	Grab Sample
		14/03/2022	3.89	48.5	31.5	5.66	79.6	280.5	32.4	-	-	-	-	-	-	-
		23/11/2022	-	67.4	43.8	6.71	84.1	284.1	31.2	High	-	-	Colourless	No odour	No Sheen	Grab
		27/03/2023	3.34	37.9	24.6	6.23	67.4	267.4	30.3	High	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	5.37	376.6	244.8	6.97	34.9	234.9	32.5	Moderate	-	-	Brown	No odour	No Sheen	Grab
		6/03/2024	1.20	50.7	33.0	6.15	112.6	312.6	29.8	Moderate	Pooled	-	Light brown	No odour	No Sheen	Grab
Ludmilla Creek (Dick Ward Drive)	SW120	21/01/2020	3.95	6178.0	4015.7	7.11	163.1	368.1	28.0	-	-	-	-	-	-	-
		16/12/2020	3.1	20304.0	13197.6	7.30	151.2	351.2	28.4	-	-	Clear	Very Slight Brown	Slightly Saline	No Sheen	Sampling Pole
		28/04/2021	2.68	71652.0	46573.8	8.09	102.6	307.6	27.7	-	-	No turbidity	Colourless/clear	Brackish	-	Sampling Pole
		14/01/2022	3.14	6132.0	3985.8	6.79	140.2	343.7	28.8	-	-	22.3	Colourless	Odourless	No Sheen	Grab Sample
		15/03/2022	3.01	3098.0	2013.7	7.10	103.3	306.1	29.8	-	-	-	-	-	-	-
		23/11/2022	-	29354.0	19080.1	7.48	-0.6	199.4	29.2	High	-	-	Colourless	No odour	No Sheen	Grab
		28/03/2023	3.04	3520.8	2288.5	7.01	115.3	315.3	28.7	High	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	-	-	-	-	-	-	-	-	Low	-	-	-	-	Grab
		6/03/2024	1.80	6433.0	4181.5	8.16	118.7	318.7	28.8	Moderate	Low	-	Light brown	No odour	No Sheen	Grab
Ludmilla Creek (Boat Ramp)	SW124	21/01/2020	3.45	50147.0	32595.6	7.68	176.0	381.0	28.9	-	-	-	-	-	-	-
		22/01/2020	4.50	4051.0	2633.2	7.88	163.3	368.3	26.1	-	-	-	-	-	-	-
		16/12/2020	5.7	44573.0	28972.5	7.40	147.2	347.2	29.7	-	-	Clear	Slight Brown	Odourless	No Sheen	Sampling Pole
		28/04/2021	3.09	71584.0	46529.6	7.84	97.0	302.0	28.3	-	-	No turbidity	Colourless/clear	Brackish	-	Sampling Pole
		14/01/2022	3.14	24913.0	16193.5	6.71	156.8	358.5	31.3	-	-	60.3	Colourless	Odourless	No Sheen	Grab Sample
		16/03/2022	3.98	38563.0	25066.0	7.91	105.5	307.8	30.5	-	-	-	-	-	-	-
		23/11/2022	0.10	58105.0	37768.3	7.78	36.6	236.6	30.2	High	-	-	Colourless	No odour	No Sheen	Grab
		28/03/2023	3.63	3129.0	2033.9	7.71	108.3	308.3	30.2	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	6.05	580.3	377.2	7.86	78.2	278.2	31.2	Moderate	Moderate	-	Brown	No odour	No Sheen	Grab
		6/03/2024	1.29	42836.0	27843.4	6.86	180.2	380.2	29.5	High	Moderate	-	Colourless	No odour	No Sheen	Grab
Ludmilla Creek (Accessible Drain)	SW125	21/01/2020	4.60	273.1	177.5	7.13	156.3	361.3	30.2	-	-	-	-	-	-	-
		16/12/2020	4.2	1120.0	728.0	8.20	127.0	327.0	30.8	-	-	Clear	Slight Brown	Odourless	No Sheen	Sampling Pole
		26/02/2021	6.97	197.6	128.4	5.69	174.9	379.9	30.3	-	-	-	-	-	-	-
		18/03/2021	0.00	180.7	117.5	6.89	-8.2	196.8	33.8	-	-	-	-	-	-	-
		14/01/2022	3.79	671.0	436.2	8.13	88.5	290.2	31.3	-	-	1.0	Colourless	Odourless	No Sheen	Grab Sample
		15/03/2022	5.56	174.6	113.5	6.79	98.3	299.8	31.6	-	-	-	-	-	-	-
		23/11/2022	1.21	84.4	54.9	8.72	100.6	300.6	30.3	High	-	-	Colourless	No odour	No Sheen	Grab
		28/03/2023	4.76	344.7	224.1	7.27	68.2	268.2	30.3	High	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	10.35	455.6	296.1	9.16	8.2	208.2	29.7	Moderate	Low	-	Brown	No odour	No Sheen	Grab
		6/03/2024	1.84	321.1	208.7	8.50	100.0	300.0	30.8	High	Pooled	-	Colourless	No odour	No Sheen	Grab
Top of Reichardt Creek - east arm	SW132	23/01/2020	3.31	74.3	48.3	6.40	191.7	396.7	29.9	-	-	-	-	-	-	-
		17/12/2020	2.9	53.1	34.5	7.50	164.9	364.9	27.2	-	-	Clear	Colourless	Odourless	No Sheen	Sampling Pole
		28/04/2021	4.26	71.7	46.6	5.63	129.5	334.5	27.9	-	Rapid	No turbidity	Colourless/clear	No odour	-	Sampling Pole.
		14/01/2022	3.12	301.0	195.7	7.97	53.7	255.5	31.2	-	-	0.8	Colourless	Odourless	No Sheen	Grab Sample
		15/03/2022	4.13	50.8	33.0	5.73	86.2	287.5	31.8	-	-	-	-	-	-	-
		24/11/2022	-	69.2	45.0	5.47	60.6	260.6	28.4	High	-	-	Colourless	No odour	Sheen	Grab
		27/03/2023	3.42	52.3	34.0	6.18	33.1	233.1	28.2	High		-	Colourless	No odour	No Sheen	Grab
		6/12/2023	3.67	40.2	26.1	7.06	48.9	248.9	26.2	High	Low	-	Light brown	No odour	No Sheen	Grab
		6/03/2024	3.00	91.4	59.4	6.98	125.6	325.6	28.6	High	Low	-	Colourless	No odour	No Sheen	Grab
Top of Reichardt Creek - west arm	SW133	23/01/2020	2.36	142.3	92.5	6.34	84.6	289.6	31.3	-	-	-	-	-	-	-
		17/12/2020	2.9	465.0	302.3	9.60	93.4	293.4	28.8	-	-	Clear	Colourless	Slight UnkNown	No Sheen	Sampling Pole
		28/04/2021	4.59	28.4	18.5	5.91	128.2	333.2	29.4	-	Rapid	Turbid	Brown	No odour	-	Sampling Pole.
		14/01/2022	4.31	461.1	299.7	7.69	102.1	303.0	32.3	-	-	38.5	Colourless	Odourless	No Sheen	Grab Sample
		15/03/2022	5.00	173.6	112.8	6.55	81.0	281.9	32.4	-	-	-	-	-	-	-
		24/11/2022	-	138.0	89.7	6.47	49.2	249.2	28.5	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		27/03/2023	3.35	22.4	14.6	6.85	48.1	248.1	29.6	High	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	3.99	455.6	296.1	5.64	86.8	286.8	26.7	Low	Low	-	Brown	No odour	No Sheen	Grab
		6/03/2024	2.52	86.6	56.3	6.67	124.9	324.9	29.2	High	Moderate	-	Colourless	No odour	No Sheen	Grab
Drain to Sadgroves Creek	SW143	17/12/2020	3.9	19006.0	12353.9	8.10	147.7	347.7	30.4	-	-	Clear	Colourless	Odourless	No Sheen	Sampling Pole
		28/04/2021	3.65	97.1	63.1	5.98	145.6	350.6	29.1	-	Rapid	Turbid	Brown	No odour	-	Sampling Pole.
		14/01/2022	3.66	2329.0	1513.9	7.43	114.4	315.5	32.1	-	-	44.0	Colourless	Odourless	No Sheen	Grab Sample
		16/03/2022	6.27	3019.0	1962.4	8.25	57.1	259.9	29.8	-	-	-	-	-	-	-
		24/11/2022	0.93	45286.0	29435.9	7.43	62.1	262.1	31.1	High	-	-	Colourless	No odour	No Sheen	Grab
		28/03/2023	4.06	5779.0	3756.4	7.35	103.6	303.6	31.6	High	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	5.38	233.9	152.0	7.20	73.8	273.8	30.2	Moderate	-	-	Brown	No odour	Organic Sheen	Grab
		6/03/2024	2.12	873.0	567.5	6.85	145.6	345.6	29.6	Moderate	Low	-	Light brown	No odour	No Sheen	Grab
DIA drain to Rapid Creek - off Charles Eaton Drive	SW168	21/01/2020	3.46	41.9	27.2	5.56	182.3	387.3	30.8	-	-	-	-	-	-	-
		16/12/2020	4.0	29.0	18.9	6.40	189.2	389.2	30.2	-	-	Clear	Brown/Orange	Slightly Metallic	No Sheen	Sampling Pole
		28/04/2021	3.65	67.6	43.9	5.83	203.2	408.2	32.2	-	Moderate	No turbidity	Colourless/clear	No odour	-	Sampling Pole.
		13/01/2022	4.25	51.3	33.3	5.61	205.1	406.5	31.7	-	-	2.4	Colourless	Odourless	No Sheen	Grab Sample
		15/03/2022	4.11	120.2	78.1	5.17	90.5	290.3	33.8	-	-	-	-	-	-	-
		23/11/2022	0.62	43.7	28.4	5.47	81.0	281.0	32.0	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		27/03/2023	3.53	49.5	32.2	5.15	86.2	286.2	33.9	Moderate	-	-	Colourless	No odour	No Sheen	Grab
		6/12/2023	4.83	105.7	68.7	5.71	58.3	258.3	32.5	Moderate	Low	-	Brown	No odour	No Sheen	Grab
		6/03/2024	4.43	83.9	54.5	5.38	133.2	333.2	31.2	High	Low	-	Colourless	No odour	No Sheen	Grab
Drain leading from CFTA	SW300	25/11/2022	0.83	20.0	12.8	5.82	-97.6	102.4	29.0	Moderate	-	-	Pale Brown	No odour	No Sheen	Grab
		25/01/2023	4.04	157.9	101.1	5.01	170.0	370.0	27.7	High	-	-	Colourless	No odour	No Sheen	Grab
		21/02/2023	6.57	37.0	23.7	6.13	76.7	276.7	28.6	High	-	-	Colourless	No odour	No Sheen	Grab
		27/03/2023	3.38	53.9	34.5	5.63	78.0	278.0	32.4	High	-	-	Colourless	No odour	No Sheen	Grab
		14/04/2023	5.12	57.4	36.7	5.64	82.9	282.9	30.4	High	-	-	Colourless	No odour	No Sheen	Grab
		13/12/2023*	2.83	58.2	34.9	4.75	123.6	323.6	30.9	Low	Low	-	Brown	No odour	No Sheen	Grab
		24/01/2024	6.96	113.9	68.3	7.52	92.8	292.8	27.7	High	Low	-	Colourless	No odour	No Sheen	Grab
		15/02/2024	4.1	53.1	31.9	6.91	-	-	29.8	High	Pooled	-	Colourless	No odour	No Sheen	Grab
		6/03/2024 *	1.49	151.3	90.8	7.44	94.9	294.9	29.8	High	Low	-	Colourless	No odour	No Sheen	Grab

Notes

DO = dissolved oxygen

EC = electrical conductivity

Redox = reduction oxidation

Temp = Temperature (°C)

^ = TDS values calculated by EC * 0.65

* = Location both in start/end of wet season event and mass flux

= Conversion made from DO% (Sat) to mg/L using USGS on-line calculator (https://water.usgs.gov/cgi-bin/dotables), BoM barometric pressure from 24/01/2024 and the machine reading for temperature and electrical conductivity.

- = not recorded

							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorote	
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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	0.01
PFAS NEMP 2020 Freshwater 99%										0.00023						19								
PFAS NEMP 2020 Recreational Water																10								
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																		
On-Base Surface Water Sampling Locations																								
Rapid Creek - Headwater south arm	**SW152**	**SW152**	**1302_SW152_171207**	**07 Dec 2017**	**576509**	**Normal**	<0.01	<0.01	0.03	<0.01	0.14	<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
		SW152	**1302_QCSW13_171207**	**07 Dec 2017**	**EB1726228**	**Interlab_D**	<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
		SW152	**1302_QCSW12_171207**	**07 Dec 2017**	**576509**	**Field_D**	<0.01	<0.01	0.04	<0.01	0.13	<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
		SW152	**1302_SW152_180108**	**08 Jan 2018**	**579571**	**Normal**	<0.01	<0.01	0.02	<0.01	0.2	<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
		SW152	**QCSW06_180108**	**08 Jan 2018**	**EB1801416**	**Interlab_D**	<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
		SW152	**1302_SW152_180309**	**09 Mar 2018**	**588959**	**Normal**	0.01	0.03	0.25	<0.01	0.51	<0.01	<0.05	0.01	0.06	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW152	**1302_SW152_220117**	**17 Jan 2022**	**ES2201342**	**Normal**	<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
		SW152	**1302_QC102_220117**	**17 Jan 2022**	**ES2201342**	**Field_D**	<0.02	<0.02	0.04	<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
		SW152	**1302_SW152_220314**	**14 Mar 2022**	**ES2209679**	**Normal**	<0.02	<0.02	0.06	<0.02	0.16	<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
		SW152	**1302_SW152_230328**	**28 Mar 2023**	**ES2311000**	**Normal**	<0.02	<0.02	0.06	<0.02	0.23	<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
		SW152	**1302_SW152_231214**	**14 Dec 2023**	**ES2343471**	**Normal**	<0.02	<0.02	<0.01	<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
		SW152	**1302_QC201_231214**	**14 Dec 2023**	**RN1415793**	**Interlab_D**	<0.01	<0.01	<0.01	<0.01	0.11	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW152	**1302_QC101_231214**	**14 Dec 2023**	**ES2343471**	**Field_D**	<0.02	<0.02	<0.01	<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
		SW152	**1302_SW152_240306**	**06 Mar 2024**	**ES2407639**	**Normal**	<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
CFTA	**SW156**	**SW156**	**1302_SW156_180129**	**29 Jan 2018**	**582498**	**Normal**	<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
		SW156	**1302_SW156_180314**	**14 Mar 2018**	**589740**	**Normal**	0.03	0.04	0.34	0.01	0.38	<0.01	<0.05	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW156	**1302_SW156_181213**	**13 Dec 2018**	**633394**	**Normal**	<0.01	<0.01	<0.01	<0.01	0.08	<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
		SW156	**1302_SW156_200123**	**21 Jan 2020**	**ES2002245**	**Normal**	<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
		SW156	**1302_QC100_200121**	**21 Jan 2020**	**ES2002245**	**Field_D**	<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
		SW156	**1302_SW156_220117**	**17 Jan 2022**	**ES2201342**	**Normal**	<0.02	<0.02	0.03	<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
		SW156	**1302_SW156_221123**	**23 Nov 2022**	**ES2242803**	**Normal**	<0.02	<0.02	<0.01	<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
		SW156	**1302_SW156_230328**	**28 Mar 2023**	**ES2311000**	**Normal**	0.21	0.05	0.1	<0.02	0.56	<0.02	0.1	0.24	0.44	0.04	0.04	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW156	**1302_SW156_231214**	**14 Dec 2023**	**ES2343471**	**Normal**	0.02	<0.02	0.07	<0.02	0.51	<0.02	<0.1	0.04	0.05	<0.02	0.03	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
Stormwater pipe from Airside operations	**SW160**	**SW160**	**1302_SW160_180129**	**29 Jan 2018**	**582498**	**Normal**	<0.01	<0.01	0.05	<0.01	0.07	<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
		SW160	**1302_SW160_180305**	**05 Mar 2018**	**588748**	**Normal**	0.09	0.10	0.73	0.06	2.6	<0.01	<0.05	0.05	0.21	0.03	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW160	**1302_SW160_190325**	**25 Mar 2019**	**647205**	**Normal**	<0.01	<0.01	0.06	<0.01	0.26	<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
		SW160	**1302_SW160_200122**	**22 Jan 2020**	**ES2002245**	**Normal**	<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
		SW160	**1302_QC104_200122**	**22 Jan 2020**	**ES2002245**	**Field_D**	<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
		SW160	**1302_SW160_220117**	**17 Jan 2022**	**ES2201342**	**Normal**	<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
		SW160	**1302_SW160_221125**	**25 Nov 2022**	**ES2243233**	**Normal**	<0.02	<0.02	0.05	<0.02	0.26	<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
		SW160	**1302_SW160_230328**	**28 Mar 2023**	**ES2311000**	**Normal**	<0.02	<0.02	0.01	<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
		SW160	**1302_SW160_231214**	**14 Dec 2023**	**ES2343471**	**Normal**	<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
		SW160	**1302_SW160_240306**	**06 Mar 2024**	**ES2407639**	**Normal**	<0.02	<0.02	0.16	<0.02	0.32	<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
Southern boundary	**SW162**	**SW162**	**1302_QCSW8_171025**	**24 Oct 2017**	**569492**	**Field_D**	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW162	**1302_SW162_171025**	**25 Oct 2017**	**569492**	**Normal**	<0.01	<0.01	<0.01	<0.01	0.03	<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
		SW162	**1302_SW162_180108**	**08 Jan 2018**	**579571**	**Normal**	<0.01	<0.01	<0.01	<0.01	0.05	<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
		SW162	**1302_QCSW05_180108**	**08 Jan 2018**	**579571**	**Field_D**	<0.01	<0.01	<0.01	<0.01	0.05	<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
		SW162	**1302_SW162_180215**	**15 Feb 2018**	**585629**	**Normal**	<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
		SW162	**1302_QCSW03_180215**	**15 Feb 2018**	**EB1804836**	**Interlab_D**	<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
		SW162	**1302_QCSW02_180215**	**15 Feb 2018**	**585629**	**Field_D**	<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
		SW162	**1302_SW162_180222**	**22 Feb 2018**	**586288**	**Normal**	0.02	0.02	0.2	<0.01	0.47	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW162	**1302_SW162_180301**	**01 Mar 2018**	**587405**	**Normal**	<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
		SW162	**1302_SW162_180305**	**05 Mar 2018**	**588748**	**Normal**	<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
		SW162	**1302_SW162_190322**	**22 Mar 2019**	**646872**	**Normal**	<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
		SW162	**QCSW09_190322**	**22 Mar 2019**	**EB1907840**	**Interlab_D**	<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
		SW162	**1302_QCSW08_190322**	**22 Mar 2019**	**646872**	**Field_D**	<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
		SW162	**1302_SW162_200121**	**21 Jan 2020**	**ES2002245**	**Normal**	<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
		SW162	**1302_SW162_200414**	**16 Apr 2020**	**ES2012927**	**Normal**	<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
		SW162	**SW162**	**18 Dec 2020**	**ES2101132**	**Normal**	<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
		SW162	**QC102**	**18 Dec 2020**	**ES2101132**	**Field_D**	<0.02	<0.02	0.03	<0.02	0.34	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.07
		SW162	**QC202**	**18 Dec 2020**	**ES2101132**	**Field_D**	<0.02	<0.02	0.03	<0.02	0.35	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.07
		SW162	**1302_SW162_210120**	**20 Jan 2021**	**ES2102255**	**Normal**	<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
		SW162	**1302_SW162_210429**	**29 Apr 2021**	**ES2116496**	**Normal**	<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
		SW162	**1302_SW162_220113**	**13 Jan 2022**	**ES2201342**	**Normal**	<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
		SW162	**1302_SW162_220314**	**14 Mar 2022**	**ES2209679**	**Normal**	<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
		SW162	**1302_SW162_221125**	**25 Nov 2022**	**ES2242803**	**Normal**	<0.02	<0.02	0.01	<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
		SW162	**1302_SW162_230328**	**28 Mar 2023**	**ES2311000**	**Normal**	<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
		SW162	**1302_SW162_231213**	**13 Dec 2023**	**ES2343471**	**Normal**	<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
		SW162	**1302_SW162_240306**	**06 Mar 2024**	**ES2407639**	**Normal**	<0.02	<0.02	<0.01	<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
Eastern end of runway	**SW170**	**SW170**	**1302_SW170_171025**	**25 Oct 2017**	**569492**	**Normal**	<0.01	<0.01	0.04	<0.01	0.48	<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	0.07
		SW170	**1302_SW170_171204**	**04 Dec 2017**	**576146**	**Normal**	<0.01	<0.01	0.02	<0.01	0.16	<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
		SW170	**QCSW03_171204**	**04 Dec 2017**	**EB1726099**	**Interlab_D**	<0.02	<0.02	0.02	<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
		SW170	**1302_QCSW02_171204**	**04 Dec 2017**	**576146**	**Field_D**	<0.01	<0.01	0.02	<0.01	0.16	<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
		SW170	**1302_SW170_180108**	**08 Jan 2018**	**579571**	**Normal**	<0.01	<0.01	0.02	<0.01	0.23	<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
		SW170	**1302_SW170_180215**	**15 Feb 2018**	**585629**	**Normal**	0.11	0.10	1.1	0.07	3.6	<0.01	<0.05	0.05	0.21	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	**1302_SW170_180222**	**22 Feb 2018**	**586288**	**Normal**	0.02	0.02	0.22	0.01	1.3	<0.01	<0.05	0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	**QCSW04_180222**	**22 Feb 2018**	**EB1805245**	**Interlab_D**	0.10	0.11	1	0.06	3.36	<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
		SW170	**1302_QCSW03_180222**	**22 Feb 2018**	**586288**	**Field_D**	0.02	0.02	0.24	0.02	1	<0.01	<0.05	0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	**1302_SW170_180301**	**01 Mar 2018**	**587405**	**Normal**	0.01	0.01	0.09	<0.01	0.4	<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
		SW170	**1302_QCSW05_180301**	**01 Mar 2018**	**EB1805816**	**Interlab_D**	<0.02	<0.02	0.1	<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
		SW170	**1302_QCSW04_180301**	**01 Mar 2018**	**587405**	**Field_D**	0.01	0.01	0.12	<0.01	0.48	<0.01	<0.05	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	**1302_SW170_180305**	**05 Mar 2018**	**588748**	**Normal**	0.03	0.03	0.38	0.02	1.6	<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
		SW170	**1302_QCSW03_180315**	**15 Mar 2018**	**EB1807098**	**Interlab_D**	<0.02	0.03	0.24	0.02	0.85	<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

								PFAS - Perfluoroalkyl Carboxylic Acids														PFAS - (n:2) Fluorote	
								Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
								µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL								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	0.01
PFAS NEMP 2020 Freshwater 99%												0.00023						19								
PFAS NEMP 2020 Recreational Water																		10								
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																				
		SW170	1302_SW170_180321	21 Mar 2018	590832	Normal	0.02	0.04	0.28	0.02	1.3	<0.01	<0.05	0.02	0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	1302_SW170_180329	29 Mar 2018	592402	Normal	<0.01	0.01	0.17	0.01	0.9	<0.01	<0.05	<0.01	0.03	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	1302_SW170_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.06	<0.01	0.27	<0.01	<0.05	0.02	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	1302_SW170_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.06	<0.01	0.3	<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	<0.01	<0.05
		SW170	1302_SW170_200121	21 Jan 2020	ES2002245	Normal	<0.02	<0.02	<0.02	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC101_200121	21 Jan 2020	ES2002245	Field_D	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_200414	16 Apr 2020	ES2012927	Normal	<0.02	<0.02	0.07	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC200_200414	16 Apr 2020	RN1271623	Interlab_D	<0.01	<0.01	0.064	<0.01	0.13	<0.01	<0.05	<0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
		SW170	1302_QC100_200414	16 Apr 2020	ES2012927	Field_D	<0.02	<0.02	0.08	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_210119	19 Jan 2021	ES2102255	Normal	<0.02	<0.02	0.09	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC100_210119	19 Jan 2021	ES2102255	Field_D	<0.02	<0.02	0.11	<0.02	0.25	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC200_210119	20 Jan 2021	RN1302294	Interlab_D	<0.01	<0.01	0.066	<0.01	0.16	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
		SW170	1302_SW170_210226	26 Feb 2021	778112	Normal	0.01	0.01	0.2	<0.01	0.35	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	1302_SW170_210429	29 Apr 2021	ES2116496	Normal	<0.02	<0.02	0.06	<0.02	0.17	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_211220	20 Dec 2021	853154	Normal	<0.01	<0.01	0.01	<0.01	0.15	<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	<0.01	<0.05
		SW170	1302_SW170_220113	13 Jan 2022	ES2201342	Normal	<0.02	<0.02	0.15	<0.02	0.42	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC100_220113	13 Jan 2022	ES2201342	Field_D	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_220302	02 Mar 2022	ES2207387	Normal	<0.02	<0.02	0.15	<0.02	0.29	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_220314	14 Mar 2022	ES2209679	Normal	<0.02	<0.02	0.15	<0.02	0.33	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC200_220314	14 Mar 2022	RN1348951	Interlab_D	0.011	0.011	0.1	<0.01	0.18	<0.01	<0.05	<0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
		SW170	1302_QC100_220314	14 Mar 2022	ES2209679	Field_D	<0.02	<0.02	0.15	<0.02	0.34	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC200_220314	14 Mar 2022	ES2209679	Field_D	<0.02	<0.02	0.14	<0.02	0.34	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_220401	01 Apr 2022	ES2211499	Normal	<0.02	<0.02	0.04	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_220406	06 Apr 2022	880007	Normal	0.01	0.01	0.17	<0.01	0.67	<0.01	<0.05	0.01	0.03	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW170	1302_SW170_220428	28 Apr 2022	ES2214601	Normal	<0.02	<0.02	0.07	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_221124	24 Nov 2022	ES2242803	Normal	<0.02	<0.02	0.05	<0.02	0.85	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_221222	22 Dec 2022	ES2246451	Normal	<0.02	<0.02	0.04	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_230125	25 Jan 2023	ES2302423	Normal	<0.02	<0.02	0.12	<0.02	0.36	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_230221	21 Feb 2023	ES2305982	Normal	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_230328	28 Mar 2023	ES2311000	Normal	<0.02	<0.02	0.06	<0.02	0.29	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_230414	14 Apr 2023	ES2312445	Normal	<0.02	<0.02	0.03	<0.02	0.16	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC200_230414	14 Apr 2023	RN1390587	Interlab_D	<0.01	<0.01	0.016	<0.01	0.092	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
		SW170	1302_QC100_230414	14 Apr 2023	ES2312445	Field_D	<0.02	<0.02	0.03	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_231213	13 Dec 2023	ES2343471	Normal	<0.02	<0.02	<0.01	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_240124	24 Jan 2024	ES2402439	Normal	<0.02	<0.02	<0.01	<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	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_240215	15 Feb 2024	ES2404842	Normal	0.03	0.03	0.26	<0.02	0.54	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_QC100_240215	15 Feb 2024	ES2404842	Field_D	0.03	0.04	0.28	<0.02	0.66	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_240306	06 Mar 2024	ES2407639	Normal	<0.02	<0.02	0.09	<0.02	0.25	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW170	1302_SW170_240430	30 Apr 2024	ES2414224	Normal	<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	<0.02	<0.05	<0.05	<0.05
Drain near FFF5	SW178	SW178	1302_SW178_180305	05 Mar 2018	588748	Normal	<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	<0.01	<0.05
		SW178	1302_SW178_190322	22 Mar 2019	646872	Normal	<0.01	<0.01	<0.01	<0.01	0.04	<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	<0.01	<0.05
		SW178	1302_SW178_210120	21 Jan 2020	ES2002245	Normal	<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	<0.02	<0.05	<0.05	<0.05
		SW178	1302_SW178_210120	20 Jan 2021	ES2102255	Normal	<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	<0.02	<0.05	<0.05	<0.05
		SW178	1302_SW178_220117	17 Jan 2022	ES2201342	Normal	<0.02	<0.02	0.04	<0.02	0.34	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW178	1302_SW178_220314	14 Mar 2022	ES2209679	Normal	<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	<0.02	<0.05	<0.05	<0.05
		SW178	1302_SW178_221125	25 Nov 2022	ES2242803	Normal	<0.02	<0.02	<0.01	<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	<0.02	<0.05	<0.05	<0.05
		SW178	1302_SW178_230328	28 Mar 2023	ES2311000	Normal	<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	<0.02	<0.05	<0.05	<0.05
		SW178	1302_QC201_230328	28 Mar 2023	RN1389154	Interlab_D	<0.01	<0.01	<0.01	<0.01	0.026	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
		SW178	1302_QC101_230328	28 Mar 2023	ES2311000	Field_D	<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	<0.02	<0.05	<0.05	<0.05
		SW178	1302_SW178_231213	13 Dec 2023	ES2343471	Normal	<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	<0.02	<0.05	<0.05	<0.05
		SW178	1302_SW178_240306	06 Mar 2024	ES2407639	Normal	<0.02	<0.02	0.01	<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	<0.02	<0.05	<0.05	<0.05
Main drain to the north of FFF4 & FFF6	SW181	SW181	1302_SW181_180129	29 Jan 2018	582498	Normal	<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	<0.01	<0.05
		SW181	1302_SW181_180312	12 Mar 2018	588963	Normal	<0.01	<0.01	0.07	<0.01	0.57	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW181	1302_SW181_190322	22 Mar 2019	646872	Normal	0.02	<0.01	0.06	<0.01	0.25	<0.01	<0.05	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW181	1302_SW181_200121	21 Jan 2020	ES2002245	Normal	<0.02	<0.02	<0.02	<0.02	0.15	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW181	SW181	18 Dec 2020	ES2101132	Normal	<0.02	<0.02	0.03	<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	<0.02	<0.05	<0.05	0.09
		SW181	1302_SW181_210120	20 Jan 2021	ES2102255	Normal	<0.02	<0.02	<0.02	<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	<0.02	<0.05	<0.05	<0.05
		SW181	1302_SW181_211220	20 Dec 2021	853154	Normal	0.01	<0.01	0.04	<0.01	0.32	<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	<0.01	<0.05
		SW181	1302_QC204_211220	20 Dec 2021	EM2126045	Interlab_D	<0.02	<0.02	0.03	<0.02	0.19	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW181	1302_SW181_220117	17 Jan 2022	ES2201342	Normal	<0.02	<0.02	0.05	<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	<0.02	<0.05	<0.05	<0.05
		SW181	1302_SW181_220314	14 Mar 2022	ES2209679	Normal	<0.02	<0.02	0.06	<0.02	0.23	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW181	1302_SW181_220406	06 Apr 2022	880007	Normal	<0.01	<0.01	0.04	<0.01	0.11	<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	<0.01	<0.05
		SW181	1302_SW181_221125	25 Nov 2022	ES2243233	Normal	<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	<0.02	<0.05	<0.05	<0.05
		SW181	1302_SW181_230328	28 Mar 2023	ES2311000	Normal	0.03	<0.02	0.08	<0.02	0.96	<0.02	<0.1	0.03	0.06	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW181	1302_SW181_231213	13 Dec 2023	ES2343471	Normal	<0.02	<0.02	<0.01	<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	<0.02	<0.05	<0.05	<0.05
		SW181	1302_SW181_240306	06 Mar 2024	ES2407639	Normal	<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	<0.02	<0.05	<0.05	<0.05
Drainage from FFTA1	SW312	SW132	1302_SW312_211220	20 Dec 2021	853154	Normal	0.11	0.05	0.51	0.07	1.3	<0.01	0.09	0.07	0.07	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW132	1302_SW312_220406	06 Apr 2022	880007	Normal	0.12	0.12	1.2	0.04	3.3	<0.01	<0.05	0.04	0.2	0.02	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW132	1302_SW312_221222	22 Dec 2022	ES2246451	Normal	<0.02	<0.02	0.08	<0.02	0.65	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW132	1302_SW312_230125	25 Jan 2023	ES2302423	Normal	0.03	0.03	0.22	0.02	1.58	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW132	1302_SW312_230221	21 Feb 2023	ES2305982	Normal	0.09	0.08	0.52	0.06	1.71	<0.02	<0.1	0.06	0.22	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW132	1302_SW312_230328	28 Mar 2023	ES2311000	Normal	0.19	0.17	0.89	0.09	1.63	<0.02	<0.1	0.11	0.46	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW132	1302_SW312_230414	14 Apr 2023	ES2312445	Normal	0.06	0.06	0.51	0.03	1.63	<0.02	<0.1	0.02	0.13	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW132	1302_SW312_231213	13 Dec 2023	ES2343471	Normal	<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	<0.02	<0.05	<0.05	<0.05

								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorote	
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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	0.01
PFAS NEMP 2020 Freshwater 99%										0.00023						19								
PFAS NEMP 2020 Recreational Water																10								
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																		
		SW132	1302_QC200_240124	24 Jan 2024	RN1417898	Interlab_D	<0.01	<0.01	<0.01	<0.01	0.029	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW132	1302_SW312_240124	24 Jan 2024	ES2402439	Normal	<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	<0.02	<0.05	<0.05
		SW132	1302_QC100_240124	24 Jan 2024	ES2402439	Field_D	<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	<0.02	<0.05	<0.05
		SW132	1302_SW312_240215	15 Feb 2024	ES2404842	Normal	<0.02	<0.02	0.06	<0.02	0.38	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW132	1302_SW312_240306	06 Mar 2024	ES2407639	Normal	<0.02	0.02	0.47	0.04	3.2	<0.02	<0.1	<0.02	0.06	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
Off-Base Surface Water Sampling Locations																								
Rapid Creek	**SW101**	SW101	1302_SW101_171207	07 Dec 2017	576509	Normal	<0.01	<0.01	0.05	<0.01	0.11	<0.01	<0.05	<0.01	0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW101	1302_SW101_180108	08 Jan 2018	579571	Normal	<0.01	<0.01	0.04	<0.01	0.14	<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
		SW101	1302_SW101_180307	07 Mar 2018	588757	Normal	<0.01	<0.01	0.03	<0.01	0.09	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW101	1302_SW101_181211	11 Dec 2018	632630	Normal	<0.01	<0.01	0.05	<0.01	0.18	<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
		SW101	1302_SW101_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.03	<0.01	0.08	<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
		SW101	1302_SW101_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.03	<0.01	0.09	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW101	1302_SW101_210429	29 Apr 2021	ES2116496	Normal	<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	<0.02	<0.05	<0.05
Rapid Creek - Upstream of Weir	**SW104**	SW104	1302_SW104_180109	09 Jan 2018	579890	Normal	0.06	0.06	0.51	0.02	1.1	<0.01	<0.05	<0.01	0.06	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW104	1302_SW104_180309	09 Mar 2018	588959	Normal	0.03	0.04	0.23	0.01	0.47	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW104	1302_SW104_181211	11 Dec 2018	632630	Normal	0.09	0.09	0.74	0.03	1.1	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW104	1302_SW104_190318	18 Mar 2019	646224	Normal	<0.01	<0.01	0.05	<0.01	0.07	<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
		SW104	1302_SW104_190318	18 Mar 2019	646224	Normal	<0.01	<0.01	0.05	<0.01	0.07	<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
		SW104	1302_SW104_200122	21 Jan 2020	ES2002245	Normal	0.06	0.07	0.56	0.03	1.26	<0.02	<0.1	0.02	0.11	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW104	1302_SW104_200415	16 Apr 2020	ES2012927	Normal	0.2	0.19	1.49	0.1	2.08	<0.02	<0.1	0.06	0.29	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW104	1302_SW104_201216	16 Dec 2020	ES2045380	Normal	<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	<0.02	<0.05	<0.05
		SW104	1302_QC100_201216	16 Dec 2020	ES2045380	Field_D	<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	<0.02	<0.05	<0.05
		SW104	1302_SW104_210506	06 May 2021	ES2117036	Normal	0.05	0.05	0.47	0.04	1.2	<0.02	<0.1	0.02	0.12	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW104	1302_SW104_220114	14 Jan 2022	ES2201342	Normal	0.06	0.05	0.5	0.08	1.24	<0.02	<0.1	<0.02	0.12	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW104	1302_SW104_221123	23 Nov 2022	ES2242803	Normal	0.05	0.04	0.31	0.04	0.63	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW104	1302_SW104_230327	27 Mar 2023	ES2311000	Normal	0.12	0.15	1.24	0.08	2.46	<0.02	<0.1	0.06	0.29	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW104	1302_SW104_231213	13 Dec 2023	ES2343471	Normal	0.05	0.03	0.22	<0.02	0.22	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW104	1302_SW104_240306	06 Mar 2024	ES2407639	Normal	0.11	0.12	1	0.06	1.78	<0.02	<0.1	0.04	0.2	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
Rapid Creek - Weir	**SW106**	SW106	RC2_SW002_170404	04 Apr 2017	541553	Normal	0.03	0.03	0.33	0.02	0.65	<0.01	<0.05	0.02	0.08	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SWRC07_170426	26 Apr 2017	544555	Normal	0.04	0.04	0.36	0.02	0.65	<0.01	<0.05	0.02	0.08	0.01	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SWRC07_20170629	29 Jun 2017	553118	Normal	0.04	0.04	0.28	0.02	0.52	<0.01	<0.05	0.02	0.06	<0.01	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_QC1SW_20170629	29 Jun 2017	553118	Field_D	0.03	0.03	0.28	0.01	0.54	<0.01	<0.05	0.02	0.06	<0.01	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_170726	26 Jul 2017	556897	Normal	0.03	0.03	0.21	<0.01	0.35	<0.01	<0.05	0.01	0.05	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_171024	24 Oct 2017	569492	Normal	<0.01	<0.01	0.04	<0.01	0.14	<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
		SW106	1302_SW106_171118	18 Nov 2017	575818	Normal	0.02	0.01	0.12	<0.01	0.08	<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
		SW106	1302_SW106_171205	05 Dec 2017	576146	Normal	0.03	0.03	0.24	<0.01	0.37	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_180109	09 Jan 2018	579890	Normal	0.02	0.02	0.22	0.01	0.4	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_180216	16 Feb 2018	585629	Normal	0.02	0.02	0.21	0.01	0.61	<0.01	<0.05	<0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_180222	22 Feb 2018	586288	Normal	0.02	0.02	0.25	<0.01	0.74	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_180301	01 Mar 2018	587405	Normal	0.02	0.03	0.2	0.01	0.54	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_180308	08 Mar 2018	588748	Normal	0.03	0.03	0.25	0.02	0.62	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_180321	21 Mar 2018	590832	Normal	0.06	0.08	0.39	0.02	0.86	<0.01	<0.05	0.04	0.1	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_180329	29 Mar 2018	592402	Normal	0.03	0.03	0.29	0.02	0.61	<0.01	<0.05	0.01	0.06	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_181211	11 Dec 2018	632630	Normal	0.02	0.02	0.16	<0.01	0.27	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	QCSW2_181211	11 Dec 2018	EB1830722	Interlab_D	<0.02	<0.02	0.13	<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	<0.02	<0.05	<0.05
		SW106	1302_QCSW1_181211	11 Dec 2018	632630	Field_D	0.02	0.02	0.13	<0.01	0.24	<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
		SW106	1302_SW106_190319	19 Mar 2019	646224	Normal	0.03	0.03	0.21	<0.01	0.35	<0.01	<0.05	0.03	0.08	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_190319	19 Mar 2019	646224	Normal	0.03	0.02	0.22	0.01	0.42	<0.01	<0.05	0.02	0.05	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	QCSW05_190319	19 Mar 2019	EB1907349	Interlab_D	0.02	0.02	0.26	<0.02	0.47	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_QCSW04_190319	19 Mar 2019	646224	Field_D	0.03	0.02	0.21	<0.01	0.37	<0.01	<0.05	0.03	0.08	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW106	1302_SW106_191115	15 Nov 2019	ES1938881	Normal	<0.02	<0.02	0.18	<0.02	0.23	<0.02	<0.1	<0.02	0.06	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW106_200121	21 Jan 2020	ES2002245	Normal	0.02	0.02	0.19	<0.02	0.43	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW106_200415	16 Apr 2020	ES2012927	Normal	0.03	0.03	0.24	<0.02	0.41	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW012_201107	07 Nov 2020	ES2040589	Normal	0.02	<0.02	0.14	<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	<0.02	<0.05	<0.05
		SW106	1302_SW106_201216	16 Dec 2020	ES2045380	Normal	0.03	0.03	0.28	<0.02	0.52	<0.02	<0.1	<0.02	0.07	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW106_210428	28 Apr 2021	ES2116496	Normal	0.03	0.03	0.3	<0.02	0.41	<0.02	<0.1	0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW106_211112	12 Nov 2021	ES2203382	Normal	<0.02	<0.02	0.11	<0.02	0.14	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW106_220114	14 Jan 2022	ES2201342	Normal	0.03	0.03	0.27	0.04	0.54	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_QC101_220114	14 Jan 2022	ES2201342	Field_D	0.03	0.03	0.27	0.04	0.59	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW106_220315	15 Mar 2022	ES2209679	Normal	0.03	0.02	0.2	<0.02	0.34	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW024_221029	29 Oct 2022	ES2240280	Normal	<0.02	<0.02	0.13	<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	<0.02	<0.05	<0.05
		SW106	1302_SW106_221123	23 Nov 2022	ES2242803	Normal	0.03	0.03	0.19	0.03	0.28	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_QC201_221123	23 Nov 2022	RN1374784	Interlab_D	0.018	0.015	0.17	<0.01	0.2	<0.01	<0.05	<0.02	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW106	1302_QC101_221123	23 Nov 2022	ES2242803	Field_D	0.03	0.03	0.2	0.03	0.32	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW106_230327	27 Mar 2023	ES2311000	Normal	0.03	0.03	0.27	<0.02	0.59	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW106	1302_SW106_231206	06 Dec 2023	ES2342430	Normal	<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	<0.02	<0.05	<0.05
		SW106	1302_SW106_240306	06 Mar 2024	ES2407639	Normal	0.02	0.02	0.18	<0.02	0.4	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
Rapid Creek - Near Henry-Wrigley Drive	**SW108**	SW108	1302_SWRC08_170426	26 Apr 2017	544555	Normal	0.04	0.03	0.37	0.02	0.66	<0.01	<0.05	0.02	0.07	0.01	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SWRC08_20170629	29 Jun 2017	553118	Normal	0.04	0.04	0.33	0.02	0.58	<0.01	<0.05	0.02	0.06	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SW108_170726	26 Jul 2017	556897	Normal	0.04	0.04	0.31	0.02	0.57	<0.01	<0.05	0.02	0.06	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SW108_171024	24 Oct 2017	569492	Normal	0.05	0.05	0.38	0.02	0.89	<0.01	<0.05	0.02	0.09	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SW108_171114	14 Nov 2017	575818	Normal	0.03	0.03	0.26	0.01	0.25	<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
		SW108	1302_SW108_171205	05 Dec 2017	576146	Normal	0.03	0.03	0.26	<0.01	0.42	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SW108_180109	09 Jan 2018	579890	Normal	0.03	0.03	0.25	0.01	0.49	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05

								PFAS - Perfluoroalkyl Carboxylic Acids														PFAS - (n:2) Fluorote	
								Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
								µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL								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
PFAS NEMP 2020 Freshwater 99%												0.00023						19							
PFAS NEMP 2020 Recreational Water																		10							
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																			
		SW108	1302_SW108_180308	08 Mar 2018	588748	Normal	0.03	0.03	0.25	0.02	0.59	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SW108_181211	11 Dec 2018	632630	Normal	0.03	0.03	0.22	0.01	0.42	<0.01	<0.05	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SW108_190319	19 Mar 2019	646224	Normal	0.03	0.03	0.25	0.01	0.43	<0.01	<0.05	0.01	0.05	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SW108_190319	19 Mar 2019	646224	Normal	0.03	0.03	0.23	<0.01	0.39	<0.01	<0.05	0.02	0.08	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW108	1302_SW108_200121	21 Jan 2020	ES2002245	Normal	0.02	0.02	0.17	<0.02	0.37	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_200415	16 Apr 2020	ES2012927	Normal	0.03	0.03	0.26	<0.02	0.46	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_QC202_200415	16 Apr 2020	RN1271623	Interlab_D	0.023	0.022	0.22	<0.01	0.39	<0.01	<0.05	<0.02	0.034	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW108	1302_QC102_200415	16 Apr 2020	ES2012927	Field_D	0.03	0.02	0.24	<0.02	0.46	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW011_201107	07 Nov 2020	ES2040589	Normal	0.03	0.02	0.2	<0.02	0.45	<0.02	<0.1	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_201216	16 Dec 2020	ES2045380	Normal	0.02	0.02	0.2	<0.02	0.35	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_210428	28 Apr 2021	ES2116496	Normal	0.03	0.03	0.27	<0.02	0.4	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_211112	12 Nov 2021	ES2203382	Normal	0.04	0.04	0.3	<0.02	0.37	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_220113	13 Jan 2022	ES2201342	Normal	0.03	0.03	0.3	0.05	0.57	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_220315	15 Mar 2022	ES2209679	Normal	0.02	0.02	0.19	<0.02	0.35	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_221123	23 Nov 2022	ES2242803	Normal	0.03	0.03	0.21	0.03	0.36	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_230327	27 Mar 2023	ES2311000	Normal	0.03	0.03	0.26	<0.02	0.57	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_231214	14 Dec 2023	ES2343471	Normal	0.06	0.05	0.45	0.02	0.55	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW108	1302_SW108_240306	06 Mar 2024	ES2407639	Normal	<0.02	0.02	0.16	<0.02	0.36	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
Rapid Creek - Near McMillan's Road	SW109	SW109	1302_SWRC09_170426	26 Apr 2017	544555	Normal	0.04	0.04	0.38	0.02	0.78	<0.01	<0.05	0.02	0.08	0.01	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SWRC09_20170629	29 Jun 2017	553118	Normal	0.07	0.06	0.56	0.03	1.1	<0.01	<0.05	0.03	0.11	0.01	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_170726	26 Jul 2017	556897	Normal	0.06	0.06	0.46	0.02	0.84	<0.01	<0.05	0.02	0.08	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_171024	24 Oct 2017	569492	Normal	0.10	0.10	0.88	0.04	1.6	<0.01	<0.05	0.06	0.2	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_171207	07 Dec 2017	577342	Normal	0.04	0.06	0.35	0.02	0.63	<0.01	<0.05	0.01	0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_180109	09 Jan 2018	579890	Normal	0.03	0.03	0.29	0.01	0.59	<0.01	<0.05	<0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_180215	15 Feb 2018	585629	Normal	0.02	0.02	0.15	<0.01	0.47	<0.01	<0.05	<0.01	0.03	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_180222	22 Feb 2018	586288	Normal	0.02	0.02	0.25	<0.01	0.78	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_180301	01 Mar 2018	587405	Normal	0.02	0.03	0.19	0.01	0.54	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_180308	08 Mar 2018	588748	Normal	0.03	0.03	0.26	0.02	0.61	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_QCSW29_180308	08 Mar 2018	EB1806463	Interlab_D	0.03	0.03	0.28	<0.02	0.45	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QCSW28_180308	08 Mar 2018	588748	Field_D	0.03	0.03	0.27	0.02	0.62	<0.01	<0.05	0.01	0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_180321	21 Mar 2018	590832	Normal	0.05	0.08	0.35	0.02	0.82	<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	<0.01	<0.05
		SW109	1302_SW109_180329	29 Mar 2018	592402	Normal	0.03	0.03	0.28	0.02	0.55	<0.01	<0.05	0.01	0.06	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_181211	11 Dec 2018	632630	Normal	0.05	0.05	0.46	0.02	0.81	<0.01	<0.05	0.02	0.07	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_190319	19 Mar 2019	646224	Normal	0.03	0.03	0.25	<0.01	0.43	<0.01	<0.05	0.03	0.1	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_190319	19 Mar 2019	646224	Normal	0.03	0.03	0.29	0.02	0.51	<0.01	<0.05	0.01	0.06	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_191115	15 Nov 2019	ES1938881	Normal	0.06	0.07	0.66	0.03	0.71	<0.02	<0.1	0.02	0.16	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_200121	21 Jan 2020	ES2002245	Normal	0.02	0.02	0.19	<0.02	0.35	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_200415	16 Apr 2020	ES2012927	Normal	0.3	0.28	0.52	0.29	0.64	0.26	1.2	0.26	0.34	0.27	0.25	0.26	0.27	0.26	0.27	0.24	0.76	0.25	0.26	
		SW109	1302_SW010_201107	07 Nov 2020	ES2040589	Normal	0.05	0.04	0.33	<0.02	0.82	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_201216	16 Dec 2020	ES2045380	Normal	<0.02	<0.02	0.18	<0.02	0.31	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC101_201216	16 Dec 2020	ES2045380	Field_D	<0.02	<0.02	0.16	<0.02	0.28	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_210226	26 Feb 2021	778112	Normal	0.03	0.03	0.32	0.01	0.55	<0.01	<0.05	0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW109	1302_SW109_210428	28 Apr 2021	ES2116496	Normal	0.04	0.04	0.32	<0.02	0.43	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC201_210428	28 Apr 2021	RN1314232	Interlab_D	0.032	0.031	0.27	0.011	0.43	<0.01	<0.05	<0.02	0.06	<0.01	0.017	0.013	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.05
		SW109	1302_QC101_210428	28 Apr 2021	ES2116496	Field_D	0.03	0.04	0.33	<0.02	0.44	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_211112	12 Nov 2021	ES2203382	Normal	0.07	0.06	0.52	0.03	0.67	<0.02	<0.1	0.02	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_220113	13 Jan 2022	ES2201342	Normal	0.03	0.03	0.28	0.03	0.56	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_220302	02 Mar 2022	ES2207387	Normal	0.03	0.02	0.22	<0.02	0.34	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC200_220302	02 Mar 2022	RN1345719	Interlab_D	0.022	0.023	0.19	<0.01	0.36	<0.01	<0.05	<0.02	0.039	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.05
		SW109	1302_QC100_220302	02 Mar 2022	ES2207387	Field_D	0.03	0.03	0.22	<0.02	0.35	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_220314	14 Mar 2022	ES2209679	Normal	0.03	0.03	0.23	<0.02	0.41	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_220401	01 Apr 2022	ES2211499	Normal	0.03	0.04	0.32	0.02	0.53	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC200_220401	01 Apr 2022	EB2209445	Interlab_D	0.03	0.04	0.3	<0.02	0.57	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC100_220401	01 Apr 2022	ES2211499	Field_D	0.03	0.03	0.27	<0.02	0.52	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_220428	28 Apr 2022	ES2214601	Normal	0.03	0.04	0.3	<0.02	0.55	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC100_220428	28 Apr 2022	ES2214601	Field_D	0.03	0.04	0.3	<0.02	0.62	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC100_220428	28 Apr 2022	ES2214601	Field_D	0.03	0.03	0.26	<0.02	0.53	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_220630	30 Jun 2022	ES2222496	Normal	0.04	0.04	0.35	0.02	0.64	<0.02	<0.1	<0.02	0.09	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC200_220630	30 Jun 2022	EM2212650	Interlab_D	0.04	0.04	0.27	<0.02	0.5	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC100_220630	30 Jun 2022	ES2222496	Field_D	0.04	0.04	0.33	0.02	0.58	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_220826	26 Aug 2022	ES2230718	Normal	0.06	0.1	0.74	0.04	1.03	<0.02	<0.1	0.03	0.11	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC200_220826	26 Aug 2022	RN1365240	Interlab_D	0.053	0.066	0.57	0.019	0.62	<0.01	<0.05	<0.02	0.078	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.05
		SW109	1302_QC100_220826	26 Aug 2022	ES2230718	Field_D	0.07	0.1	0.8	0.04	1.06	<0.02	<0.1	0.03	0.12	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW023_221029	29 Oct 2022	ES2240280	Normal	0.02	0.03	0.24	<0.02	0.41	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_221123	23 Nov 2022	ES2242803	Normal	0.04	0.04	0.33	0.03	0.58	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_221222	22 Dec 2022	ES2246451	Normal	0.03	0.03	0.25	<0.02	0.46	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC200_221222	22 Dec 2022	RN1377705	Interlab_D	0.019	0.021	0.21	<0.01	0.38	<0.01	<0.05	<0.02	0.027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.05
		SW109	1302_QC100_221222	22 Dec 2022	ES2246451	Field_D	0.03	0.03	0.27	<0.02	0.53	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_230125	25 Jan 2023	ES2302423	Normal	0.03	0.04	0.34	<0.02	0.57	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_230221	23 Feb 2023	ES2305982	Normal	<0.02	<0.02	0.1	<0.02	0.26	<0.02	<0.1	<0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_230327	27 Mar 2023	ES2311000	Normal	0.03	0.03	0.26	<0.02	0.58	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_230414	14 Apr 2023	ES2312445	Normal	0.03	0.03	0.26	<0.02	0.52	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_SW109_230830	30 Aug 2023	ES2329252	Normal	0.08	0.09	0.74	0.04	1.1	<0.02	<0.1	0.03	0.14	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW109	1302_QC200_230830	30 Aug 2023	RN1404541	Interlab_D	0.055	0.065	0.58	0.021	0.53	<0.01	<0.05	<0.02	0.082	0.011	0.021	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.05

								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorote	
								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)
								µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL								0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2020 Freshwater 99%												19								
PFAS NEMP 2020 Recreational Water												10								

Location	Location Code		Field ID	Date	Lab Report Number	Sample Type	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)
							µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		SW109	1302_QC100_230830	30 Aug 2023	ES2329252	Field_D	0.07	0.08	0.69	0.04	1.05	<0.02
		SW109	1302_SW109_231206	06 Dec 2023	ES2342430	Normal	0.06	0.08	0.6	0.03	0.82	<0.02
		SW109	1302_SW109_240124	24 Jan 2024	ES2402439	Normal	<0.02	<0.02	0.11	<0.02	0.21	<0.02
		SW109	1302_SW109_2401215	15 Feb 2024	ES2404842	Normal	<0.02	<0.02	0.12	<0.02	0.26	<0.02
		SW109	1302_SW109_240306	06 Mar 2024	ES2407639	Normal	0.02	0.02	0.18	<0.02	0.38	<0.02
		SW109	1302_SW109_240430	30 Apr 2024	ES2414224	Normal	0.03	0.04	0.28	<0.02	0.54	<0.02
Rapid Creek - Pipe Track	SW112	SW112	1302_SWRC12_170426	26 Apr 2017	544555	Normal	0.02	0.02	0.17	0.01	0.26	<0.01
		SW112	1302_SW112_170726	26 Jul 2017	556897	Normal	<0.01	<0.01	0.05	<0.01	0.04	<0.01
		SW112	1302_SW112_171024	24 Oct 2017	569492	Normal	<0.01	<0.01	0.03	<0.01	0.03	<0.01
		SW112	1302_QC03SW_171024	24 Oct 2017	569492	Field_D	<0.01	<0.01	0.03	<0.01	0.02	<0.01
		SW112	1302_SW112_171116	16 Nov 2017	575818	Normal	0.03	0.03	0.22	<0.01	0.18	<0.01
		SW112	1302_SW112_171205	05 Dec 2017	576146	Normal	<0.01	<0.01	0.07	<0.01	0.07	<0.01
		SW112	1302_SW112_180109	09 Jan 2018	579890	Normal	<0.01	<0.01	0.05	<0.01	0.08	<0.01
		SW112	1302_SW112_180307	07 Mar 2018	588748	Normal	0.03	0.03	0.25	0.02	0.66	<0.01
		SW112	1302_SW112_181211	11 Dec 2018	632630	Normal	<0.01	<0.01	0.05	<0.01	0.03	<0.01
		SW112	1302_SW112_190319	19 Mar 2019	646224	Normal	0.03	0.03	0.28	0.01	0.5	<0.01
		SW112	1302_SW112_190319	19 Mar 2019	646224	Normal	0.03	0.03	0.25	<0.01	0.45	<0.01
		SW112	1302_SW112_200121	21 Jan 2020	ES2002245	Normal	<0.02	<0.02	0.12	<0.02	0.22	<0.02
		SW112	1302_SW112_200415	16 Apr 2020	ES2012927	Normal	0.04	0.03	0.27	<0.02	0.43	<0.02
		SW112	1302_SW112_201216	16 Dec 2020	ES2045380	Normal	0.04	0.03	0.33	0.02	0.63	<0.02
		SW112	1302_SW112_210428	28 Apr 2021	ES2116496	Normal	<0.02	<0.02	0.05	<0.02	0.04	<0.02
		SW112	1302_SW112_220114	14 Jan 2022	ES2201342	Normal	0.03	0.03	0.27	0.03	0.52	<0.02
		SW112	1302_SW112_220316	16 Mar 2022	ES2209679	Normal	0.03	0.02	0.21	<0.02	0.37	<0.02
		SW112	1302_SW022_221029	29 Oct 2022	ES2240280	Normal	0.05	0.07	0.5	0.03	0.8	<0.02
		SW112	1302_SW112_221123	23 Nov 2022	ES2242803	Normal	<0.02	<0.02	0.14	<0.02	0.27	<0.02
		SW112	1302_SW112_230328	28 Mar 2023	ES2311000	Normal	<0.02	0.02	0.16	<0.02	0.36	<0.02
		SW112	1302_QC202_230328	28 Mar 2023	RN1389154	Interlab_D	0.012	0.014	0.13	<0.01	0.25	<0.01
		SW112	1302_QC102_230328	28 Mar 2023	ES2311000	Field_D	<0.02	0.02	0.17	<0.02	0.38	<0.02
		SW112	1302_SW112_231206	06 Dec 2023	ES2342430	Normal	<0.02	<0.02	0.14	<0.02	0.19	<0.02
		SW112	1302_SW112_240306	06 Mar 2024	ES2407639	Normal	0.02	0.02	0.18	<0.02	0.39	<0.02
Rapid Creek - Fishing Platform	SW113	SW113	1302_SWRC13_170426	26 Apr 2017	544555	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		SW113	1302_SW113_170726	26 Jul 2017	556897	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		SW113	1302_SW113_171024	24 Oct 2017	569492	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		SW113	1302_SW113_171120	20 Nov 2017	575818	Normal	<0.01	<0.01	0.02	<0.01	0.03	<0.01
		SW113	1302_QC4SW_171120	20 Nov 2017	575818	Field_D	<0.01	<0.01	0.02	<0.01	0.03	<0.01
		SW113	1302_SW113_171205	05 Dec 2017	576146	Normal	<0.01	<0.01	0.03	<0.01	0.05	<0.01
		SW113	1302_SW113_180109	09 Jan 2018	579890	Normal	<0.01	<0.01	0.04	<0.01	0.08	<0.01
		SW113	1302_QCSW12_180109	09 Jan 2018	EB1801723	Interlab_D	<0.02	<0.02	0.04	<0.02	0.06	<0.02
		SW113	1302_QCSW11_180109	09 Jan 2018	579890	Field_D	<0.01	<0.01	0.04	<0.01	0.08	<0.01
		SW113	1302_SW113_180307	07 Mar 2018	588748	Normal	0.02	0.02	0.16	<0.01	0.38	<0.01
		SW113	1302_SW113_181211	11 Dec 2018	632630	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		SW113	1302_SW113_190319	19 Mar 2019	646224	Normal	0.01	0.01	0.1	<0.01	0.14	<0.01
		SW113	1302_SW113_190319	19 Mar 2019	646224	Normal	0.01	0.01	0.1	<0.01	0.14	<0.01
		SW113	1302_SW113_191113	13 Nov 2019	ES1938881	Normal	<0.02	<0.02	0.02	<0.02	0.02	<0.02
		SW113	1302_SW113_200122	22 Jan 2020	ES2002245	Normal	<0.02	<0.02	0.05	<0.02	0.08	<0.02
		SW113	1302_SW113_200415	16 Apr 2020	ES2012927	Normal	<0.02	<0.02	0.11	<0.02	0.18	<0.02
		SW113	1302_SW008_201104	04 Nov 2020	ES2040589	Normal	<0.02	<0.02	0.03	<0.02	0.07	<0.02
		SW113	1302_SW113_201216	16 Dec 2020	ES2045380	Normal	<0.02	<0.02	0.09	<0.02	0.13	<0.02
		SW113	1302_SW113_210428	28 Apr 2021	ES2116496	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
		SW113	1302_SW113_211203	03 Dec 2021	ES2203382	Normal	<0.02	<0.02	0.03	<0.02	0.02	<0.02
		SW113	1302_SW113_220114	14 Jan 2022	ES2201342	Normal	0.02	<0.02	0.2	0.04	0.39	<0.02
		SW113	1302_SW113_220316	16 Mar 2022	ES2209679	Normal	<0.02	<0.02	0.12	<0.02	0.22	<0.02
		SW113	1302_SW020_221026	26 Oct 2022	ES2240280	Normal	<0.02	<0.02	0.04	<0.02	0.05	<0.02
		SW113	1302_SW113_221123	23 Nov 2022	ES2242803	Normal	<0.02	<0.02	0.02	<0.02	0.04	<0.02
		SW113	1302_SW113_230328	28 Mar 2023	ES2311000	Normal	<0.02	<0.02	0.08	<0.02	0.19	<0.02
		SW113	1302_SW113_231206	06 Dec 2023	ES2342430	Normal	<0.02	<0.02	0.02	<0.02	0.04	<0.02
		SW113	1302_SW113_240306	06 Mar 2024	ES2407639	Normal	<0.02	<0.02	0.1	<0.02	0.23	<0.02
DIA drain to Rapid Creek - Near Dogs home	SW114	SW114	1302_SW114_171024	24 Oct 2017	569492	Normal	<0.01	<0.01	0.01	<0.01	0.04	<0.01
		SW114	1302_SW114_171205	05 Dec 2017	576146	Normal	0.05	0.05	0.52	0.03	0.99	<0.01
		SW114	1302_SW114_180109	09 Jan 2018	579890	Normal	0.04	0.04	0.36	0.02	0.77	<0.01
		SW114	1302_QCSW09_180109	09 Jan 2018	EB1801723	Interlab_D	0.04	0.04	0.4	0.02	0.65	<0.02
		SW114	1302_QCSW08_180109	09 Jan 2018	579890	Field_D	0.04	0.04	0.34	0.01	0.77	<0.01
		SW114	1302_SW114_180308	08 Mar 2018	588748	Normal	0.18	0.21	1.7	0.11	4.3	<0.01
		SW114	1302_SW114_181211	11 Dec 2018	632630	Normal	0.04	0.03	0.33	0.02	0.66	<0.01
		SW114	1302_SW114_190319	19 Mar 2019	646224	Normal	0.06	0.06	0.6	0.04	1.4	<0.01
		SW114	1302_SW114_190319	19 Mar 2019	646224	Normal	0.06	0.06	0.68	0.04	1.7	<0.01
		SW114	1302_SW114_200121	21 Jan 2020	ES2002245	Normal	<0.02	<0.02	0.08	<0.02	0.09	<0.02
		SW114	1302_SW114_200415	16 Apr 2020	ES2012927	Normal	0.11	0.11	0.95	0.08	2.08	<0.02
		SW114	1302_SW114_201216	16 Dec 2020	ES2045380	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
		SW114	1302_SW114_210428	28 Apr 2021	ES2116496	Normal	0.07	0.04	0.45	0.04	1.26	<0.02
		SW114	1302_SW114_220114	14 Jan 2022	ES2201342	Normal	0.17	0.16	1.55	0.15	3.24	<0.02
		SW114	1302_SW114_220314	14 Mar 2022	ES2209679	Normal	0.21	0.2	1.56	0.1	2.8	<0.02
		SW114	1302_SW114_221123	23 Nov 2022	ES2242803	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02
		SW114	1302_SW114_230327	27 Mar 2023	ES2311000	Normal	0.16	0.21	1.58	0.13	3.79	<0.02

							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorote	
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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	0.01
PFAS NEMP 2020 Freshwater 99%										0.00023						19								
PFAS NEMP 2020 Recreational Water																10								
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																		
		SW114	1302_SW114_231213	13 Dec 2023	ES2343471	Normal	<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
		SW114	1302_SW114_240306	06 Mar 2024	ES2407639	Normal	0.14	0.15	1.2	0.08	2.54	<0.02	<0.1	0.06	0.28	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
		SW114	1302_QC102_240306	06 Mar 2024	ES2407639	Field_D	0.13	0.14	1.24	0.08	2.35	<0.02	<0.1	0.06	0.25	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
DIA drain to Rapid Creek	SW115	SW115	1302_SW001_20170629	29 Jun 2017	553118	Normal	<0.01	<0.01	0.03	<0.01	0.07	<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
		SW115	1302_SW115_170726	26 Jul 2017	556897	Normal	<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
		SW115	1302_SW115_171205	05 Dec 2017	576146	Normal	0.10	0.11	1	0.06	2.2	<0.01	<0.05	0.05	0.21	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW115	QCSW07_171205	05 Dec 2017	EB1726099	Interlab_D	0.10	0.17	1.23	0.04	2.17	<0.02	<0.1	0.03	0.27	0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW115	1302_QCSW06_171205	05 Dec 2017	576146	Field_D	0.11	0.11	1.1	0.06	2.2	<0.01	<0.05	0.06	0.21	0.03	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW115	1302_SW115_180109	09 Jan 2018	579890	Normal	0.15	0.17	1.4	0.08	3.3	<0.01	<0.05	0.05	0.25	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW115	1302_SW115_180308	08 Mar 2018	588748	Normal	0.12	0.14	1.1	0.07	2.7	<0.01	<0.05	0.04	0.16	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW115	1302_SW115_181211	11 Dec 2018	632630	Normal	<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
		SW115	1302_SW115_190319	19 Mar 2019	646224	Normal	0.09	0.10	0.84	0.05	1.4	<0.01	0.11	0.09	0.42	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW115	1302_SW115_190319	19 Mar 2019	646224	Normal	0.10	0.12	0.97	0.06	1.7	<0.01	<0.05	0.03	0.17	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW115	1302_SW115_ 200121	21 Jan 2020	ES2002245	Normal	0.1	0.12	0.92	0.06	1.59	<0.02	<0.1	0.02	0.14	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW115	1302_SW115_200415	16 Apr 2020	ES2012927	Normal	0.06	0.06	0.53	0.03	0.89	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW115	1302_SW115_201216	16 Dec 2020	ES2045380	Normal	<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
		SW115	1302_SW115_210428	28 Apr 2021	ES2116496	Normal	<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
		SW115	1302_SW115_220114	14 Jan 2022	ES2201342	Normal	0.03	0.03	0.26	0.03	0.43	<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
		SW115	1302_SW115_220314	14 Mar 2022	ES2209679	Normal	0.1	0.09	0.71	0.04	0.94	<0.02	<0.1	<0.02	0.14	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW115	1302_SW115_221123	23 Nov 2022	ES2242803	Normal	<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
		SW115	1302_SW115_230327	27 Mar 2023	ES2311000	Normal	<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
		SW115	1302_SW115_231206	06 Dec 2023	ES2342430	Normal	<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
		SW115	1302_SW115_240306	06 Mar 2024	ES2407639	Normal	<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
Ludmilla Creek (Dick Ward Drive)	SW120	SW120	1302_SWLC02_20170629	29 Jun 2017	553118	Normal	<0.01	<0.01	<0.01	<0.01	0.02	<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
		SW120	1302_QC2SW_20170629	29 Jun 2017	EM1708832	Interlab_D	<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	<0.05	<0.12	<0.05	<0.05
		SW120	1302_SW120_170726	26 Jul 2017	556897	Normal	0.01	0.02	0.11	<0.01	0.22	<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
		SW120	1302_SW120_171024	24 Oct 2017	569492	Normal	0.01	0.02	0.12	<0.01	0.21	<0.01	<0.05	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW120	1302_SW120_171206	06 Dec 2017	576509	Normal	<0.01	0.01	0.08	<0.01	0.2	<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
		SW120	1302_SW120_180110	10 Jan 2018	580118	Normal	0.05	0.06	0.49	0.02	0.97	<0.01	<0.05	0.04	0.09	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW120	1302_SW120_180130	30 Jan 2018	582713	Normal	0.08	0.09	0.72	0.03	1.3	<0.01	<0.05	0.03	0.1	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW120	1302_SW120_180306	06 Mar 2018	588748	Normal	0.07	0.08	0.75	0.04	1.5	<0.01	<0.05	0.04	0.15	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW120	1302_SW120_181211	11 Dec 2018	632630	Normal	0.01	0.01	0.09	<0.01	0.13	<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
		SW120	QCSW3_181211	11 Dec 2018	EB1830722	Interlab_D	<0.10	<0.10	0.16	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10
		SW120	1302_QCSW4_181211	11 Dec 2018	632630	Field_D	0.01	0.01	0.09	<0.01	0.14	<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
		SW120	1302_SW120_190319	19 Mar 2019	646224	Normal	0.08	0.10	0.84	0.04	0.99	<0.01	<0.05	0.04	0.16	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW120	1302_SW120_190319	19 Mar 2019	646224	Normal	0.08	0.08	0.8	0.04	1	<0.01	0.1	0.12	0.67	0.03	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW120	1302_SW120_191114	14 Nov 2019	ES1938881	Normal	0.03	0.03	0.34	<0.02	0.38	<0.02	<0.1	<0.02	0.07	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW120	1302_SW120_200121	21 Jan 2020	ES2002245	Normal	0.03	0.03	0.24	<0.02	0.34	<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
		SW120	1302_SW120_200415	16 Apr 2020	ES2012927	Normal	0.06	0.07	0.65	0.04	1.11	<0.02	<0.1	<0.02	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW120	1302_QC201_200415	16 Apr 2020	RN1271623	Interlab_D	0.046	0.052	0.55	0.022	0.97	<0.01	<0.05	0.025	0.086	0.012	0.024	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW120	1302_QC101_201415	16 Apr 2020	ES2012927	Field_D	0.06	0.05	0.6	0.04	1.13	<0.02	<0.1	<0.02	0.11	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW120	1302_SW009_201103	03 Nov 2020	ES2040589	Normal	0.04	0.02	0.3	<0.02	0.94	<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
		SW120	1302_SW120_201216	16 Dec 2020	ES2045380	Normal	0.02	0.02	0.23	<0.02	0.35	<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
		SW120	1302_SW120_210428	28 Apr 2021	ES2116496	Normal	<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
		SW120	1302_SW120_211109	09 Nov 2021	ES2203382	Normal	0.04	0.03	0.4	0.02	0.49	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW120	1302_SW120_220114	14 Jan 2022	ES2201342	Normal	0.05	0.05	0.52	0.06	0.91	<0.02	<0.1	<0.02	0.09	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW120	1302_SW120_220315	15 Mar 2022	ES2209679	Normal	0.04	0.03	0.34	<0.02	0.54	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW120	1302_SW120_221123	23 Nov 2022	ES2242803	Normal	0.03	0.03	0.28	0.03	0.58	<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
		SW120	1302_SW120_230328	28 Mar 2023	ES2311000	Normal	<0.02	<0.02	0.14	<0.02	0.39	<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
		SW120	1302_SW120_231206	06 Dec 2023	ES2342430	Normal	<0.02	0.02	0.19	<0.02	0.29	<0.02	<0.1	0.05	0.07	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW120	1302_SW120_240306	06 Mar 2024	ES2407639	Normal	0.03	0.04	0.37	<0.02	0.58	<0.02	<0.1	0.08	0.13	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.05
Ludmilla Creek (Boat Ramp)	SW124	SW124	1302_SWLC05_170425	25 Apr 2017	544555	Normal	<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
		SW124	1302_SWLC05_20170629	29 Jun 2017	553118	Normal	<0.01	<0.01	<0.01	<0.01	0.02	<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
		SW124	1302_SW124_170726	26 Jul 2017	556897	Normal	<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
		SW124	1302_SW124_171024	24 Oct 2017	569492	Normal	<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
		SW124	1302_SW124_171208	08 Dec 2017	577342	Normal	<0.01	<0.01	0.01	<0.01	0.04	<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
		SW124	1302_SW124_180130	30 Jan 2018	582713	Normal	<0.01	<0.01	<0.01	<0.01	0.04	<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
		SW124	1302_SW124_180306	06 Mar 2018	588748	Normal	<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
		SW124	1302_SW124_181211	11 Dec 2018	632630	Normal	<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
		SW124	1302_SW124_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.03	<0.01	0.03	<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
		SW124	1302_SW124_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.03	<0.01	0.04	<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
		SW124	1302_SW124_191112	12 Nov 2019	ES1938881	Normal	<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
		SW124	1302_QC106_191112	12 Nov 2019	ES1938881	Field_D	<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
		SW124	1302_SW124_200122	22 Jan 2020	ES2002245	Normal	<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
		SW124	1302_SW124_200415	16 Apr 2020	ES2012927	Normal	<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
		SW124	1302_SW007_201103	03 Nov 2020	ES2040589	Normal	<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
		SW124	1302_QC121_201103	03 Nov 2020	ES2040589	Field_D	<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
		SW124	1302_SW124_201216	16 Dec 2020	ES2045380	Normal	<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
		SW124	1302_SW124_210428	28 Apr 2021	ES2116496	Normal	<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
		SW124	1302_QC200_210428	28 Apr 2021	RN1314232	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW124	1302_QC100_210428	28 Apr 2021	ES2116496	Field_D	<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
		SW124	1302_SW124_211203	03 Dec 2021	ES2203382	Normal	<0.02	<0.02	0.03	<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
		SW124	1302_QC130_211203	03 Dec 2021	ES2203382	Field_D	<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
		SW124	1302_SW124_220114	14 Jan 2022	ES2201342	Normal	<0.02	<0.02	0.17	0.05	0.59	<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

							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorote	
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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	0.01
PFAS NEMP 2020 Freshwater 99%										0.00023						19								
PFAS NEMP 2020 Recreational Water																10								
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																		
		SW124	1302_SW124_220316	16 Mar 2022	ES2209679	Normal	<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
		SW124	1302_SW019_221025	25 Oct 2022	ES2240280	Normal	<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
		SW124	1302_QC139_221025	25 Oct 2022	ES2240280	Field_D	<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
		SW124	1302_SW124_221123	23 Nov 2022	ES2242803	Normal	<0.02	<0.02	0.01	<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
		SW124	1302_SW124_230328	28 Mar 2023	ES2311000	Normal	<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
		SW124	1302_SW124_231206	06 Dec 2023	ES2342430	Normal	<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
		SW124	1302_SW124_240306	06 Mar 2024	ES2407639	Normal	<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
Ludmilla Creek (Accessible Drain)	SW125	SW125	1302_SW125_171206	06 Dec 2017	576509	Normal	0.12	0.17	1.4	0.08	2.7	<0.01	<0.05	0.05	0.21	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_180110	10 Jan 2018	580118	Normal	0.15	0.20	1.6	0.09	3.8	<0.01	<0.05	0.07	0.26	0.04	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_180216	16 Feb 2018	585629	Normal	0.18	0.16	1.6	0.09	4.3	<0.01	<0.05	0.09	0.33	0.05	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_180222	22 Feb 2018	586288	Normal	0.02	0.02	0.2	<0.01	0.43	<0.01	<0.05	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_180301	01 Mar 2018	587405	Normal	0.29	0.32	2.3	0.13	5.1	<0.01	0.06	0.12	0.55	0.07	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_180307	07 Mar 2018	588748	Normal	0.38	0.45	3.6	0.23	6.6	<0.01	0.09	0.19	0.82	0.11	0.19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_180321	21 Mar 2018	590832	Normal	0.24	0.39	2.2	0.13	5.2	<0.01	0.06	0.14	0.49	0.07	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_QCSW04_180321	21 Mar 2018	EB1807722	Interlab_D	0.22	0.27	2.18	0.13	3.24	<0.02	<0.1	0.11	0.42	0.06	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_QCSW03_180321	21 Mar 2018	590832	Field_D	0.22	0.35	2.2	0.12	4.9	<0.01	0.05	0.13	0.45	0.06	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_180329	29 Mar 2018	592402	Normal	0.20	0.23	2.3	0.12	3.9	<0.01	<0.05	0.12	0.47	0.06	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_QCSW06_180329	29 Mar 2018	EB1808692	Interlab_D	0.24	0.30	2.39	0.14	3.44	<0.02	<0.1	0.11	0.48	0.07	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_QCSW05_180329	29 Mar 2018	592402	Field_D	0.22	0.25	2.4	0.13	4.3	<0.01	0.06	0.14	0.5	0.06	0.13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_180412	12 Apr 2018	594148	Normal	0.20	0.28	2.9	0.19	4	<0.01	0.06	0.1	0.45	0.07	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_181211	11 Dec 2018	632630	Normal	0.16	0.22	1.9	0.11	4.1	<0.01	<0.05	0.08	0.29	0.05	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_190319	19 Mar 2019	646224	Normal	0.13	0.25	1.7	0.08	3.2	<0.01	<0.05	0.05	0.31	0.04	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_190319	19 Mar 2019	646224	Normal	0.14	0.16	1.7	0.12	3	<0.01	0.24	0.27	1.6	0.06	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_200121	21 Jan 2020	ES2002245	Normal	0.12	0.14	1.15	0.06	1.68	<0.02	<0.1	0.06	0.22	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_SW125_200415	16 Apr 2020	ES2012927	Normal	0.14	0.16	1.49	0.1	2.76	<0.02	<0.1	0.06	0.26	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_SW125_201216	16 Dec 2020	ES2045380	Normal	0.11	0.15	1.39	0.08	2.82	0.03	<0.1	0.06	0.22	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_SW125_210226	26 Feb 2021	778112	Normal	0.14	0.18	1.7	0.09	3.1	<0.01	<0.05	0.08	0.25	0.05	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_210318	18 Mar 2021	785443	Normal	0.11	0.13	2	0.06	2.1	<0.01	0.05	0.06	0.21	0.03	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW125	1302_SW125_220114	14 Jan 2022	ES2201342	Normal	0.15	0.15	1.46	0.09	2.41	<0.02	<0.1	0.05	0.26	0.04	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_SW125_220315	15 Mar 2022	ES2209679	Normal	0.16	0.14	1.48	0.09	2.88	<0.02	<0.1	0.07	0.31	0.04	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_SW021_221029	29 Oct 2022	ES2240280	Normal	<0.02	<0.02	0.16	<0.02	0.27	<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
		SW125	1302_SW125_221123	23 Nov 2022	ES2242803	Normal	0.08	0.11	1.07	0.06	1.95	<0.02	<0.1	0.05	0.17	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_QC200_221123	23 Nov 2022	RN1374784	Interlab_D	0.064	0.074	0.92	0.037	1.2	<0.01	<0.05	0.035	0.13	0.019	0.037	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW125	1302_QC100_221123	23 Nov 2022	ES2242803	Field_D	0.1	0.12	1.18	0.07	2.27	<0.02	<0.1	0.06	0.2	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW125	1302_SW125_230328	28 Mar 2023	ES2311000	Normal	0.13	0.18	1.62	0.1	2.98	<0.02	<0.1	0.3	0.47	0.09	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	1.04
		SW125	1302_SW125_231206	06 Dec 2023	ES2342430	Normal	0.05	0.07	0.53	0.02	0.71	<0.02	<0.1	0.08	0.15	0.04	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.19
		SW125	1302_SW125_240306	06 Mar 2024	ES2407639	Normal	0.12	0.15	1.34	0.09	2.4	<0.02	<0.1	0.28	0.44	0.08	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.37
Top of Reichardt Creek - east arm	SW132	SW132	1302_SWRCC02_170426	26 Apr 2017	544555	Normal	0.01	0.01	0.14	<0.01	0.25	<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
		SW132	1302_SWRCC02_20170629	29 Jun 2017	553118	Normal	<0.01	<0.01	0.03	<0.01	0.06	<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
		SW132	1302_SW132_170726	26 Jul 2017	556897	Normal	<0.01	<0.01	0.03	<0.01	0.05	<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
		SW132	1302_SW132_171024	24 Oct 2017	569492	Normal	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.05	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW132	1302_SW132_171116	16 Nov 2017	575818	Normal	<0.01	<0.01	0.02	<0.01	0.02	<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
		SW132	1302_SW132_171208	08 Dec 2017	577342	Normal	<0.01	<0.01	0.02	<0.01	0.06	<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
		SW132	1302_SW132_180110	10 Jan 2018	580118	Normal	<0.01	<0.01	0.03	<0.01	0.06	<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
		SW132	1302_SW132_180307	07 Mar 2018	588748	Normal	<0.01	<0.01	0.08	<0.01	0.2	<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
		SW132	1302_QCSW15_180307	07 Mar 2018	EB1806463	Interlab_D	0.25	0.24	2.34	0.13	4.6	<0.02	<0.1	0.07	0.4	0.04	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW132	1302_QCSW14_180307	07 Mar 2018	588748	Field_D	<0.01	<0.01	0.08	<0.01	0.17	<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
		SW132	1302_SW132_181211	11 Dec 2018	632630	Normal	<0.01	<0.01	0.04	<0.01	0.06	<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
		SW132	1302_SW132_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.05	<0.01	0.08	<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
		SW132	1302_SW132_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.05	<0.01	0.07	<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
		SW132	QCSW02_190319	19 Mar 2019	EB1907349	Interlab_D	<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
		SW132	1302_QCSW01_190319	19 Mar 2019	646224	Field_D	<0.01	<0.01	0.04	<0.01	0.07	<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
		SW132	1302_QCSW01_190319	19 Mar 2019	646224	Field_D	<0.01	<0.01	0.05	<0.01	0.07	<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
		SW132	1302_SW132_200123	23 Jan 2020	ES2002245	Normal	<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
		SW132	1302_SW132_200416	16 Apr 2020	ES2012927	Normal	<0.02	<0.02	0.08	<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
		SW132	1302_SW132_201217	17 Dec 2020	ES2045380	Normal	<0.02	<0.02	0.04	<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
		SW132	1302_SW132_210428	28 Apr 2021	ES2116496	Normal	<0.02	<0.02	0.07	<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
		SW132	1302_SW132_220114	14 Jan 2022	ES2201342	Normal	<0.02	<0.02	0.06	<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
		SW132	1302_SW132_220315	15 Mar 2022	ES2209679	Normal	<0.02	<0.02	0.07	<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
		SW132	1302_SW132_221124	24 Nov 2022	ES2242803	Normal	<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
		SW132	1302_QC200_221124	24 Nov 2022	RN1374784	Interlab_D	<0.01	<0.01	0.026	<0.01	0.049	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW132	1302_QC100_221124	24 Nov 2022	ES2242803	Field_D	<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
		SW132	1302_SW132_230327	27 Mar 2023	ES2311000	Normal	<0.02	<0.02	0.1	<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
		SW132	1302_QC200_230327	27 Mar 2023	RN1389154	Interlab_D	<0.01	<0.01	0.076	<0.01	0.14	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW132	1302_QC100_230327	27 Mar 2023	ES2311000	Field_D	<0.02	<0.02	0.09	<0.02	0.23	<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
		SW132	1302_SW132_231206	06 Dec 2023	ES2342430	Normal	<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
		SW132	1302_SW132_240306	06 Mar 2024	ES2407639	Normal	<0.02	<0.02	0.07	<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
Top of Reichardt Creek - west arm	SW133	SW133	1302_SWRCC01_170426	26 Apr 2017	544555	Normal	<0.01	<0.01	0.07	<0.01	0.08	<0.01	<0.05	0.08	0.05	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SWRCC01_20170629	29 Jun 2017	553118	Normal	0.01	0.02	0.12	<0.01	0.22	<0.01	<0.05	0.03	0.03	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SW133_170726	26 Jul 2017	556897	Normal	0.01	0.02	0.13	<0.01	0.13	<0.01	<0.05	0.03	0.04	0.01	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SW133_171024	24 Oct 2017	569492	Normal	<0.01	0.01	0.05	<0.01	0.07	<0.01	<0.05	0.05	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SW133_171208	08 Dec 2017	577342	Normal	0.01	0.03	0.11	<0.01	0.13	<0.01	<0.05	0.08	0.05	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SW133_180111	11 Jan 2018	580281	Normal	<0.01	0.01	0.1	<0.01	0.11	<0.01	<0.05	0.13	0.07	0.04	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SW133_180307	07 Mar 2018	588748	Normal	<0.01	<0.01	0.06	<0.01	0.09	<0.01	<0.05	0.07	0.04	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05

							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorote	
						Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						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	0.01
PFAS NEMP 2020 Freshwater 99%										0.00023						19								
PFAS NEMP 2020 Recreational Water																10								
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																		
		SW133	1302_SW133_181211	11 Dec 2018	632630	Normal	0.01	0.02	0.13	<0.01	0.13	<0.01	<0.05	0.06	0.04	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SW133_190319	19 Mar 2019	646224	Normal	0.13	0.16	1.6	0.1	3	<0.01	0.22	0.26	1.5	0.06	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SW133_190319	19 Mar 2019	646224	Normal	0.15	0.27	1.9	0.1	3.5	<0.01	<0.05	0.06	0.33	0.04	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW133	1302_SW133_200123	23 Jan 2020	ES2002245	Normal	<0.02	<0.02	0.05	<0.02	0.04	<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
		SW133	1302_QC105_200123	23 Jan 2020	ES2002245	Field_D	<0.02	<0.02	0.04	<0.02	0.04	<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
		SW133	1302_SW133_200416	16 Apr 2020	ES2012927	Normal	<0.02	<0.02	0.07	<0.02	0.06	<0.02	<0.1	0.04	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW133	1302_SW133_201217	17 Dec 2020	ES2045380	Normal	<0.02	<0.02	0.05	<0.02	0.05	<0.02	<0.1	0.05	0.04	0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW133	1302_SW133_210428	28 Apr 2021	ES2116496	Normal	<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
		SW133	1302_SW133_220114	14 Jan 2022	ES2201342	Normal	<0.02	<0.02	0.07	<0.02	0.06	<0.02	<0.1	0.04	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW133	1302_SW133_220315	15 Mar 2022	ES2209679	Normal	<0.02	<0.02	0.06	<0.02	0.05	<0.02	<0.1	0.04	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW133	1302_SW133_221124	24 Nov 2022	ES2242803	Normal	<0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	0.03	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW133	1302_SW133_230327	27 Mar 2023	ES2311000	Normal	<0.02	<0.02	0.06	<0.02	0.08	<0.02	<0.1	0.05	0.03	0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW133	1302_SW133_231206	06 Dec 2023	ES2342430	Normal	<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
		SW133	1302_QC200_231206	06 Dec 2023	RN1414076	Interlab_D	<0.01	<0.01	0.017	<0.01	0.021	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW133	1302_QC100_231206	06 Dec 2023	ES2342430	Field_D	<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
		SW133	1302_QC200_231213	13 Dec 2023	RN1415182	Interlab_D	<0.01	<0.01	0.03	<0.01	0.032	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW133	1302_SW133_240306	06 Mar 2024	ES2407639	Normal	<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
		SW133	1302_QC100_240306	06 Mar 2024	ES2407639	Field_D	<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
Drain to Sadgroves Creek	SW143	SW143	1302_SW143_170726	26 Jul 2017	556897	Normal	<0.01	<0.01	0.02	<0.01	0.05	<0.01	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_170907	08 Sep 2017	563049	Normal	<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
		SW143	1302_SW143_171024	24 Oct 2017	569492	Normal	<0.01	<0.01	<0.01	<0.01	0.02	<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
		SW143	1302_QC01SW_171024	24 Oct 2017	569492	Field_D	<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
		SW143	1302_SW143_171117	17 Nov 2017	575818	Normal	<0.01	<0.01	0.02	<0.01	0.02	<0.01	<0.05	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_QC5SW_171117	17 Nov 2017	575818	Field_D	<0.01	<0.01	0.02	<0.01	0.02	<0.01	<0.05	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_171208	08 Dec 2017	577342	Normal	<0.01	<0.01	0.03	<0.01	0.11	<0.01	<0.05	0.04	0.02	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_180111	11 Jan 2018	580281	Normal	<0.01	<0.01	0.05	<0.01	0.11	<0.01	<0.05	0.05	0.03	0.02	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_180216	16 Feb 2018	585629	Normal	<0.01	<0.01	0.05	<0.01	0.1	<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
		SW143	1302_SW143_180222	22 Feb 2018	586288	Normal	<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
		SW143	1302_SW143_180301	01 Mar 2018	587405	Normal	<0.01	<0.01	0.03	<0.01	0.08	<0.01	<0.05	0.02	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_180307	07 Mar 2018	588748	Normal	<0.01	<0.01	0.04	<0.01	0.07	<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
		SW143	1302_SW143_180321	21 Mar 2018	590832	Normal	<0.01	<0.01	0.04	<0.01	0.07	<0.01	<0.05	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_QCSW06_180321	21 Mar 2018	EB1807722	Interlab_D	<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	<0.05	<0.12	<0.05	<0.05
		SW143	1302_QCSW05_180321	21 Mar 2018	590832	Field_D	<0.01	<0.01	0.04	<0.01	0.07	<0.01	<0.05	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_180329	29 Mar 2018	592402	Normal	0.22	0.25	2.6	0.13	4.1	<0.01	0.06	0.14	0.52	0.07	0.13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_181211	11 Dec 2018	632630	Normal	<0.01	<0.01	0.02	<0.01	0.04	<0.01	<0.05	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.04	<0.01	0.11	<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
		SW143	1302_SW143_190319	19 Mar 2019	646224	Normal	<0.01	<0.01	0.04	<0.01	0.13	<0.01	0.08	0.18	0.08	0.05	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW143	1302_SW143_200416	16 Apr 2020	ES2012927	Normal	<0.02	<0.02	0.05	<0.02	0.07	<0.02	<0.1	0.04	0.04	<0.02	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW143	1302_SW143_201217	17 Dec 2020	ES2045380	Normal	<0.02	<0.02	0.14	<0.02	0.23	<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
		SW143	1302_SW143_210428	28 Apr 2021	ES2116496	Normal	<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
		SW143	1302_SW143_22011	14 Jan 2022	ES2201342	Normal	<0.02	<0.02	0.09	<0.02	0.16	<0.02	<0.1	0.06	0.06	0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.12
		SW143	1302_SW143_220316	16 Mar 2022	ES2209679	Normal	<0.02	<0.02	0.06	<0.02	0.14	<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	0.08
		SW143	1302_SW143_221124	24 Nov 2022	ES2242803	Normal	<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
		SW143	1302_SW143_230328	28 Mar 2023	ES2311000	Normal	<0.02	<0.02	0.06	<0.02	0.14	<0.02	<0.1	0.03	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.05
		SW143	1302_SW143_231206	06 Dec 2023	ES2342430	Normal	<0.02	<0.02	0.02	<0.02	0.07	<0.02	<0.1	0.03	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW143	1302_SW143_240306	06 Mar 2024	ES2407639	Normal	<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
DIA drain to Rapid Creek - off Charles Eaton Drive	SW168	SW168	1302_SW002_20170629	29 Jun 2017	553118	Normal	0.10	0.09	1	0.04	1.6	<0.01	<0.05	0.03	0.14	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_170726	26 Jul 2017	556897	Normal	0.10	0.12	0.86	0.05	1.5	<0.01	<0.05	0.06	0.18	0.03	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_171024	24 Oct 2017	569492	Normal	0.07	0.07	0.66	0.03	1.5	<0.01	0.06	0.09	0.22	0.04	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_171207	07 Dec 2017	577342	Normal	0.09	0.13	0.83	0.05	1.7	<0.01	<0.05	0.03	0.12	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_180109	09 Jan 2018	579890	Normal	0.06	0.07	0.6	0.03	1.3	<0.01	<0.05	0.03	0.13	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_180215	15 Feb 2018	585629	Normal	0.09	0.08	0.62	0.03	1.5	<0.01	<0.05	0.05	0.16	0.03	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_180222	22 Feb 2018	586288	Normal	0.01	0.02	0.24	0.01	1	<0.01	<0.05	0.01	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	QCSW06_180222	22 Feb 2018	EB1805245	Interlab_D	0.07	0.09	0.94	0.04	1.95	<0.02	<0.1	0.04	0.17	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	1302_QCSW05_180222	22 Feb 2018	586288	Field_D	0.02	0.02	0.25	<0.01	0.85	<0.01	<0.05	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_180301	01 Mar 2018	587405	Normal	0.08	0.09	0.55	0.03	1.3	<0.01	<0.05	0.04	0.15	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_180308	08 Mar 2018	588748	Normal	0.07	0.07	0.43	0.03	0.93	<0.01	<0.05	0.03	0.12	0.03	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_QCSW05_180315	15 Mar 2018	EB1807098	Interlab_D	0.04	0.05	0.33	0.02	0.59	<0.02	<0.1	<0.02	0.09	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	1302_SW168_180321	21 Mar 2018	590832	Normal	0.05	0.08	0.35	0.02	0.82	<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
		SW168	1302_SW168_180329	29 Mar 2018	592402	Normal	0.05	0.05	0.41	0.02	0.7	<0.01	<0.05	0.02	0.09	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_QCSW04_180329	29 Mar 2018	EB1808692	Interlab_D	0.06	0.06	0.38	0.02	0.58	<0.02	<0.1	0.03	0.08	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	1302_QCSW03_180329	29 Mar 2018	592402	Field_D	0.06	0.06	0.42	0.03	0.79	<0.01	<0.05	0.02	0.1	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_181211	11 Dec 2018	632630	Normal	0.10	0.12	1	0.05	2.1	<0.01	<0.05	0.03	0.15	0.02	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_190319	19 Mar 2019	646224	Normal	0.05	0.05	0.39	0.02	0.66	<0.01	0.06	0.06	0.17	0.03	0.05	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_190319	19 Mar 2019	646224	Normal	0.05	0.05	0.45	0.02	0.7	<0.01	<0.05	0.02	0.08	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW168	1302_SW168_200121	21 Jan 2020	ES2002245	Normal	0.05	0.06	0.45	0.03	0.69	<0.02	<0.1	0.02	0.09	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	1302_QC103_200121	21 Jan 2020	ES2002245	Field_D	0.05	0.06	0.45	0.02	0.65	<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
		SW168	1302_SW168_200415	16 Apr 2020	ES2012927	Normal	0.08	0.08	0.57	0.03	0.71	<0.02	<0.1	0.02	0.12	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	1302_SW168_201216	16 Dec 2020	ES2045380	Normal	<0.02	<0.02	0.07	<0.02	0.27	<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
		SW168	1302_SW168_210428	28 Apr 2021	ES2116496	Normal	0.07	0.08	0.61	0.03	0.72	<0.02	<0.1	0.05	0.23	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	1302_SW168_220113	13 Jan 2022	ES2201342	Normal	0.06	0.06	0.42	0.05	0.9	<0.02	<0.1	<0.02	0.11	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	1302_SW168_220315	15 Mar 2022	ES2209679	Normal	0.05	0.04	0.3	<0.02	0.47	<0.02	<0.1	0.03	0.12	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	1302_QC201_220315	15 Mar 2022	RN1348951	Interlab_D	0.019	0.02	0.24	<0.01	0.67	<0.01	<0.05	<0.02	0.048	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW168	1302_QC101_220315	15 Mar 2022	ES2209679	Field_D	0.05	0.05	0.3	<0.02	0.46	<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

								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorote	
								Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
								µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL								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	0.01
PFAS NEMP 2020 Freshwater 99%												0.00023						19								
PFAS NEMP 2020 Recreational Water																		10								
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**	**Sample Type**																				
		SW168	**1302_SW168_221123**	**23 Nov 2022**	**ES2242803**	**Normal**		0.08	0.08	0.62	0.09	1.2	<0.02	<0.1	<0.02	0.17	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	**1302_SW168_230327**	**27 Mar 2023**	**ES2311000**	**Normal**		0.05	0.06	0.36	0.02	0.67	<0.02	<0.1	0.03	0.1	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	**1302_SW168_231206**	**06 Dec 2023**	**ES2342430**	**Normal**		0.06	0.08	0.66	0.04	1.06	<0.02	<0.1	0.02	0.13	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	**1302_SW168_240306**	**06 Mar 2024**	**ES2407639**	**Normal**		0.04	0.05	0.3	0.02	0.65	<0.02	<0.1	0.03	0.11	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW168	**1302_QC101_240306**	**06 Mar 2024**	**ES2407639**	**Field_D**		0.05	0.05	0.34	0.02	0.66	<0.02	<0.1	0.03	0.11	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
Draid leading from CFTA	**SW300**	**SW300**	**1302_SW300_210226**	**26 Feb 2021**	**778112**	**Normal**		0.17	0.19	0.86	0.04	1.9	<0.01	0.31	0.36	0.58	0.39	0.46	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW300	**1302_SW300_220119**	**19 Jan 2022**	**858872**	**Normal**		0.82	0.74	9.3	0.50	27	<0.01	0.24	0.38	1.9	0.20	0.62	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW300	**1302_SW300_220302**	**02 Mar 2022**	**ES2207387**	**Normal**		0.23	0.19	1.02	0.05	1.14	<0.02	0.2	0.46	0.86	0.27	0.38	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_220401**	**01 Apr 2022**	**ES2211499**	**Normal**		0.15	0.13	0.71	0.04	0.75	<0.02	0.1	0.21	0.52	0.22	0.24	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_220406**	**06 Apr 2022**	**880007**	**Normal**		0.15	0.10	0.56	0.02	0.68	<0.01	0.10	0.14	0.27	0.14	0.16	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
		SW300	**1302_SW300_221125**	**25 Nov 2022**	**ES2243233**	**Normal**		<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	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_230125**	**25 Jan 2023**	**ES2302423**	**Normal**		0.22	0.18	0.93	0.04	0.71	<0.02	0.2	0.29	0.42	0.25	0.25	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_QC200_230125**	**25 Jan 2023**	**RN1381361**	**Interlab_D**		0.19	0.14	<0.01	<0.01	0.62	<0.01	0.16	0.22	0.36	0.22	0.22	0.022	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW300	**1302_QC100_230125**	**25 Jan 2023**	**ES2302423**	**Field_D**		0.20	0.18	0.95	0.04	0.77	<0.02	0.2	0.30	0.41	0.25	0.26	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_QC200_230221**	**12 Feb 2023**	**RN1384540**	**Interlab_D**		0.012	0.014	0.094	<0.01	0.22	<0.01	<0.05	<0.02	0.026	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01
		SW300	**1302_SW300_230221**	**21 Feb 2023**	**ES2305982**	**Normal**		<0.02	<0.02	0.09	<0.02	0.15	<0.02	<0.1	0.03	0.05	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_QC100_230221**	**21 Feb 2023**	**ES2305982**	**Field_D**		<0.02	<0.02	0.11	<0.02	0.26	<0.02	<0.1	<0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_230327**	**27 Mar 2023**	**ES2311000**	**Normal**		0.23	0.22	1.03	0.05	1.11	<0.02	0.2	0.34	0.66	0.35	0.35	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_230414**	**14 Apr 2023**	**ES2312445**	**Normal**		0.18	0.17	0.96	0.05	1.24	<0.02	0.2	0.35	0.62	0.36	0.36	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_231213**	**13 Dec 2023**	**ES2343471**	**Normal**		<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	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_240124**	**24 Jan 2024**	**ES2402439**	**Normal**		<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	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_240215**	**15 Feb 2024**	**ES2404842**	**Normal**		0.08	0.09	0.44	0.02	0.82	<0.02	<0.1	0.15	0.26	0.16	0.18	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
		SW300	**1302_SW300_240306**	**06 Mar 2024**	**ES2407639**	**Normal**		0.15	0.14	0.73	0.02	0.84	<0.02	0.2	0.28	0.45	0.26	0.25	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05

Environmental Standards

HEPA, January 2020, PFAS NEMP 2020 Freshwater 99%

HEPA, January 2020, PFAS NEMP 2020 Recreational Water

						Iomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
On-Base Surface Water Sampling Locations																
Rapid Creek - Headwater south arm	**SW152**	**SW152**	**1302_SW152_171207**	**07 Dec 2017**	**576509**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	0.17
		SW152	**1302_QCSW13_171207**	**07 Dec 2017**	**EB1726228**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.21
		SW152	**1302_QCSW12_171207**	**07 Dec 2017**	**576509**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	0.17
		SW152	**1302_SW152_180108**	**08 Jan 2018**	**579571**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.22	0.22
		SW152	**QCSW06_180108**	**08 Jan 2018**	**EB1801416**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW152	**1302_SW152_180309**	**09 Mar 2018**	**588959**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.76	0.88
		SW152	**1302_SW152_220117**	**17 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.22
		SW152	**1302_QC102_220117**	**17 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	0.23
		SW152	**1302_SW152_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.22
		SW152	**1302_SW152_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.29
		SW152	**1302_SW152_231214**	**14 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12
		SW152	**1302_QC201_231214**	**14 Dec 2023**	**RN1415793**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.11	0.11
		SW152	**1302_QC101_231214**	**14 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12
		SW152	**1302_SW152_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.27	0.27
CFTA	**SW156**	**SW156**	**1302_SW156_180129**	**29 Jan 2018**	**582498**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	<0.1
		SW156	**1302_SW156_180314**	**14 Mar 2018**	**589740**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.72	0.86
		SW156	**1302_SW156_181213**	**13 Dec 2018**	**633394**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.1
		SW156	**1302_SW156_200123**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW156	**1302_QC100_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05
		SW156	**1302_SW156_220117**	**17 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.17
		SW156	**1302_SW156_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05
		SW156	**1302_SW156_230328**	**28 Mar 2023**	**ES2311000**	0.08	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.66	1.91
		SW156	**1302_SW156_231214**	**14 Dec 2023**	**ES2343471**	0.09	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.86
Stormwater pipe from Airside operations	**SW160**	**SW160**	**1302_SW160_180129**	**29 Jan 2018**	**582498**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.12
		SW160	**1302_SW160_180305**	**05 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.33	3.92
		SW160	**1302_SW160_190325**	**25 Mar 2019**	**647205**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.32	0.33
		SW160	**1302_SW160_200122**	**22 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
		SW160	**1302_QC104_200122**	**22 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
		SW160	**1302_SW160_220117**	**17 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.14
		SW160	**1302_SW160_221125**	**25 Nov 2022**	**ES2243233**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.31	0.31
		SW160	**1302_SW160_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.10
		SW160	**1302_SW160_231214**	**14 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08
		SW160	**1302_SW160_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.48	0.51
Southern boundary	**SW162**	**SW162**	**1302_QCSW8_171025**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.1
		SW162	**1302_SW162_171025**	**25 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.1
		SW162	**1302_SW162_180108**	**08 Jan 2018**	**579571**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		SW162	**1302_QCSW05_180108**	**08 Jan 2018**	**579571**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		SW162	**1302_SW162_180215**	**15 Feb 2018**	**585629**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW162	**1302_QCSW03_180215**	**15 Feb 2018**	**EB1804836**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW162	**1302_QCSW02_180215**	**15 Feb 2018**	**585629**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW162	**1302_SW162_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.67	0.74
		SW162	**1302_SW162_180301**	**01 Mar 2018**	**587405**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW162	**1302_SW162_180305**	**05 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW162	**1302_SW162_190322**	**22 Mar 2019**	**646872**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	<0.1
		SW162	**QCSW09_190322**	**22 Mar 2019**	**EB1907840**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW162	**1302_QCSW08_190322**	**22 Mar 2019**	**646872**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	<0.1
		SW162	**1302_SW162_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03
		SW162	**1302_SW162_200414**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11
		SW162	**SW162**	**18 Dec 2020**	**ES2101132**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05
		SW162	**QC102**	**18 Dec 2020**	**ES2101132**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.47
		SW162	**QC202**	**18 Dec 2020**	**ES2101132**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.38	0.48
		SW162	**1302_SW162_210120**	**20 Jan 2021**	**ES2102255**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW162	**1302_SW162_210429**	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
		SW162	**1302_SW162_220113**	**13 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
		SW162	**1302_SW162_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
		SW162	**1302_SW162_221125**	**25 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
		SW162	**1302_SW162_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
		SW162	**1302_SW162_231213**	**13 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
		SW162	**1302_SW162_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
Eastern end of runway	**SW170**	**SW170**	**1302_SW170_171025**	**25 Oct 2017**	**569492**	0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.52	0.60
		SW170	**1302_SW170_171204**	**04 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.18	0.18
		SW170	**QCSW03_171204**	**04 Dec 2017**	**EB1726099**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.16
		SW170	**1302_QCSW02_171204**	**04 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.18	0.18
		SW170	**1302_SW170_180108**	**08 Jan 2018**	**579571**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.25	0.25
		SW170	**1302_SW170_180215**	**15 Feb 2018**	**585629**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.7	5.31
		SW170	**1302_SW170_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.52	1.63
		SW170	**QCSW04_180222**	**22 Feb 2018**	**EB1805245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.36	4.90
		SW170	**1302_QCSW03_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.24	1.36
		SW170	**1302_SW170_180301**	**01 Mar 2018**	**587405**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.49	0.54
		SW170	**1302_QCSW05_180301**	**01 Mar 2018**	**EB1805816**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.41	0.43
		SW170	**1302_QCSW04_180301**	**01 Mar 2018**	**587405**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.6	0.66
		SW170	**1302_SW170_180305**	**05 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.98	2.19
		SW170	**1302_QCSW03_180315**	**15 Mar 2018**	**EB1807098**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.09	1.20

						Iomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
		SW170	**1302_SW170_180321**	**21 Mar 2018**	**590832**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.58	1.75
		SW170	**1302_SW170_180329**	**29 Mar 2018**	**592402**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.07	1.13
		SW170	**1302_SW170_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.33	0.41
		SW170	**1302_SW170_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.36	0.37
		SW170	**1302_SW170_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12
		SW170	**1302_QC101_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.20
		SW170	**1302_SW170_200414**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.26	0.26
		SW170	**1302_QC200_200414**	**16 Apr 2020**	**RN1271623**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.194	0.20
		SW170	**1302_QC100_200414**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.27	0.27
		SW170	**1302_SW170_210119**	**19 Jan 2021**	**ES2102255**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.33	0.33
		SW170	**1302_QC100_210119**	**19 Jan 2021**	**ES2102255**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.36	0.36
		SW170	**1302_QC200_210119**	**20 Jan 2021**	**RN1302294**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.226	0.23
		SW170	**1302_SW170_210226**	**26 Feb 2021**	**778112**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.55	0.60
		SW170	**1302_SW170_210429**	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	0.26
		SW170	**1302_SW170_211220**	**20 Dec 2021**	**853154**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.16	0.16
		SW170	**1302_SW170_220113**	**13 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.57	0.59
		SW170	**1302_QC100_220113**	**13 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.51	0.51
		SW170	**1302_SW170_220302**	**02 Mar 2022**	**ES2207387**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.44	0.48
		SW170	**1302_SW170_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.48	0.52
		SW170	**1302_QC200_220314**	**14 Mar 2022**	**RN1348951**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.28	0.32
		SW170	**1302_QC100_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.49	0.53
		SW170	**1302_QC200_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.48	0.52
		SW170	**1302_SW170_220401**	**01 Apr 2022**	**ES2211499**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15
		SW170	**1302_SW170_220406**	**06 Apr 2022**	**880007**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.84	0.91
		SW170	**1302_SW170_220428**	**28 Apr 2022**	**ES2214601**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.25
		SW170	**1302_SW170_221124**	**24 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.9	0.90
		SW170	**1302_SW170_221222**	**22 Dec 2022**	**ES2246451**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	0.34
		SW170	**1302_SW170_230125**	**25 Jan 2023**	**ES2302423**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.48	0.50
		SW170	**1302_SW170_230221**	**21 Feb 2023**	**ES2305982**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12
		SW170	**1302_SW170_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.35	0.35
		SW170	**1302_SW170_230414**	**14 Apr 2023**	**ES2312445**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.19
		SW170	**1302_QC200_230414**	**14 Apr 2023**	**RN1390587**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.108	0.11
		SW170	**1302_QC100_230414**	**14 Apr 2023**	**ES2312445**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.20
		SW170	**1302_SW170_231213**	**13 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07
		SW170	**1302_SW170_240124**	**24 Jan 2024**	**ES2402439**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05
		SW170	**1302_SW170_240215**	**15 Feb 2024**	**ES2404842**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.8	0.94
		SW170	**1302_QC100_240215**	**15 Feb 2024**	**ES2404842**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.94	1.09
		SW170	**1302_SW170_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	0.34
		SW170	**1302_SW170_240430**	**30 Apr 2024**	**ES2414224**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.19
Drain near FFF5	**SW178**	**SW178**	**1302_SW178_180305**	**05 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW178	**1302_SW178_190322**	**22 Mar 2019**	**646872**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.1
		SW178	**1302_SW178_210120**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
		SW178	**1302_SW178_210120**	**20 Jan 2021**	**ES2102255**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
		SW178	**1302_SW178_220117**	**17 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.38	0.38
		SW178	**1302_SW178_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW178	**1302_SW178_221125**	**25 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09
		SW178	**1302_SW178_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW178	**1302_QC201_230328**	**28 Mar 2023**	**RN1389154**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.026	0.03
		SW178	**1302_QC101_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW178	**1302_SW178_231213**	**13 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW178	**1302_SW178_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
Main drain to the north of FFF4 & FFF6	**SW181**	**SW181**	**1302_SW181_180129**	**29 Jan 2018**	**582498**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW181	**1302_SW181_180312**	**12 Mar 2018**	**588963**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.64	0.67
		SW181	**1302_SW181_190322**	**22 Mar 2019**	**646872**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.31	0.37
		SW181	**1302_SW181_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15
		SW181	**SW181**	**18 Dec 2020**	**ES2101132**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.38	0.47
		SW181	**1302_SW181_210120**	**20 Jan 2021**	**ES2102255**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.19
		SW181	**1302_SW181_211220**	**20 Dec 2021**	**853154**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.36	0.39
		SW181	**1302_QC204_211220**	**20 Dec 2021**	**EM2126045**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.22
		SW181	**1302_SW181_220117**	**17 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	0.23
		SW181	**1302_SW181_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.32
		SW181	**1302_SW181_220406**	**06 Apr 2022**	**880007**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	0.15
		SW181	**1302_SW181_221125**	**25 Nov 2022**	**ES2243233**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03
		SW181	**1302_SW181_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.04	1.16
		SW181	**1302_SW181_231213**	**13 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12
		SW181	**1302_SW181_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
Drainage from FFTA1	**SW312**	**SW132**	**1302_SW312_211220**	**20 Dec 2021**	**853154**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.81	2.42
		SW132	**1302_SW312_220406**	**06 Apr 2022**	**880007**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.5	5.14
		SW132	**1302_SW312_221222**	**22 Dec 2022**	**ES2246451**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	0.73
		SW132	**1302_SW312_230125**	**25 Jan 2023**	**ES2302423**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.8	1.98
		SW132	**1302_SW312_230221**	**21 Feb 2023**	**ES2305982**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.23	2.78
		SW132	**1302_SW312_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.52	3.63
		SW132	**1302_SW312_230414**	**14 Apr 2023**	**ES2312445**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.14	2.48
		SW132	**1302_SW312_231213**	**13 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.10

						Iomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
		SW132	**1302_QC200_240124**	**24 Jan 2024**	**RN1417898**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.029	0.03
		SW132	**1302_SW312_240124**	**24 Jan 2024**	**ES2402439**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW132	**1302_QC100_240124**	**24 Jan 2024**	**ES2402439**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW132	**1302_SW312_240215**	**15 Feb 2024**	**ES2404842**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.44	0.47
		SW132	**1302_SW312_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.67	3.82
Off-Base Surface Water Sampling Locations																
Rapid Creek	**SW101**	**SW101**	**1302_SW101_171207**	**07 Dec 2017**	**576509**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.16	0.22
		SW101	**1302_SW101_180108**	**08 Jan 2018**	**579571**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.18	0.18
		SW101	**1302_SW101_180307**	**07 Mar 2018**	**588757**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.16
		SW101	**1302_SW101_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	0.23
		SW101	**1302_SW101_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.11
		SW101	**1302_SW101_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.15
		SW101	**1302_SW101_210429**	**29 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.20
Rapid Creek - Upstream of Weir	**SW104**	**SW104**	**1302_SW104_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.61	1.83
		SW104	**1302_SW104_180309**	**09 Mar 2018**	**588959**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.7	0.85
		SW104	**1302_SW104_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.84	2.08
		SW104	**1302_SW104_190318**	**18 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.14
		SW104	**1302_SW104_190318**	**18 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.12
		SW104	**1302_SW104_200122**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.82	2.13
		SW104	**1302_SW104_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.57	4.50
		SW104	**1302_SW104_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
		SW104	**1302_QC100_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW104	**1302_SW104_210506**	**06 May 2021**	**ES2117036**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.67	1.98
		SW104	**1302_SW104_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.74	2.07
		SW104	**1302_SW104_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.94	1.16
		SW104	**1302_SW104_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.7	4.48
		SW104	**1302_SW104_231213**	**13 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.44	0.56
		SW104	**1302_SW104_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.78	3.38
Rapid Creek - Weir	**SW106**	**SW106**	**RC2_SW002_170404**	**04 Apr 2017**	**541553**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.98	1.19
		SW106	**1302_SWRC07_170426**	**26 Apr 2017**	**544555**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.01	1.19
		SW106	**1302_SWRC07_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.8	0.93
		SW106	**1302_QC1SW_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.82	0.94
		SW106	**1302_SW106_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.56	0.70
		SW106	**1302_SW106_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.18	0.18
		SW106	**1302_SW106_171118**	**18 Nov 2017**	**575818**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.2	0.25
		SW106	**1302_SW106_171205**	**05 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.61	0.70
		SW106	**1302_SW106_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.62	0.70
		SW106	**1302_SW106_180216**	**16 Feb 2018**	**585629**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.82	0.92
		SW106	**1302_SW106_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.99	1.10
		SW106	**1302_SW106_180301**	**01 Mar 2018**	**587405**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.74	0.87
		SW106	**1302_SW106_180308**	**08 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.87	1.02
		SW106	**1302_SW106_180321**	**21 Mar 2018**	**590832**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.25	1.61
		SW106	**1302_SW106_180329**	**29 Mar 2018**	**592402**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.9	1.08
		SW106	**1302_SW106_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.43	0.50
		SW106	**QCSW2_181211**	**11 Dec 2018**	**EB1830722**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	0.34
		SW106	**1302_QCSW1_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.37	0.43
		SW106	**1302_SW106_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.56	0.76
		SW106	**1302_SW106_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.64	0.79
		SW106	**QCSW05_190319**	**19 Mar 2019**	**EB1907349**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	0.83
		SW106	**1302_QCSW04_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.58	0.77
		SW106	**1302_SW106_191115**	**15 Nov 2019**	**ES1938881**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.41	0.47
		SW106	**1302_SW106_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.62	0.69
		SW106	**1302_SW106_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.65	0.76
		SW106	**1302_SW012_201107**	**07 Nov 2020**	**ES2040589**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.46	0.50
		SW106	**1302_SW106_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.8	0.94
		SW106	**1302_SW106_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.71	0.88
		SW106	**1302_SW106_211112**	**12 Nov 2021**	**ES2203382**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.28
		SW106	**1302_SW106_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.81	0.95
		SW106	**1302_QC101_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.86	1.00
		SW106	**1302_SW106_220315**	**15 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.54	0.66
		SW106	**1302_SW024_221029**	**29 Oct 2022**	**ES2240280**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.33	0.35
		SW106	**1302_SW106_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.47	0.59
		SW106	**1302_QC201_221123**	**23 Nov 2022**	**RN1374784**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.37	0.42
		SW106	**1302_QC101_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.52	0.64
		SW106	**1302_SW106_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.86	1.01
		SW106	**1302_SW106_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
		SW106	**1302_SW106_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.67
Rapid Creek - Near Henry-Wrigley Drive	**SW108**	**SW108**	**1302_SWRC08_170426**	**26 Apr 2017**	**544555**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.03	1.19
		SW108	**1302_SWRC08_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.91	1.04
		SW108	**1302_SW108_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.88	1.08
		SW108	**1302_SW108_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.27	1.54
		SW108	**1302_SW108_171114**	**14 Nov 2017**	**575818**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.51	0.63
		SW108	**1302_SW108_171205**	**05 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.68	0.77
		SW108	**1302_SW108_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.74	0.84

						Iomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
		SW108	**1302_SW108_180308**	**08 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.84	0.99
		SW108	**1302_SW108_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.64	0.75
		SW108	**1302_SW108_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.68	0.83
		SW108	**1302_SW108_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.62	0.81
		SW108	**1302_SW108_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.54	0.61
		SW108	**1302_SW108_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.72	0.83
		SW108	**1302_QC202_200415**	**16 Apr 2020**	**RN1271623**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.61	0.70
		SW108	**1302_QC102_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.7	0.80
		SW108	**1302_SW011_201107**	**07 Nov 2020**	**ES2040589**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.65	0.74
		SW108	**1302_SW108_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.55	0.63
		SW108	**1302_SW108_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.67	0.80
		SW108	**1302_SW108_211112**	**12 Nov 2021**	**ES2203382**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.67	0.82
		SW108	**1302_SW108_220113**	**13 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.87	1.04
		SW108	**1302_SW108_220315**	**15 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.54	0.64
		SW108	**1302_SW108_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.57	0.71
		SW108	**1302_SW108_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.83	0.97
		SW108	**1302_SW108_231214**	**14 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1	1.23
		SW108	**1302_SW108_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.52	0.59
Rapid Creek - Near McMillan's Road	**SW109**	**SW109**	**1302_SWRC09_170426**	**26 Apr 2017**	**544555**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.16	1.33
		SW109	**1302_SWRC09_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.66	1.89
		SW109	**1302_SW109_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.3	1.57
		SW109	**1302_SW109_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.48	3.07
		SW109	**1302_SW109_171207**	**07 Dec 2017**	**577342**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.98	1.18
		SW109	**1302_SW109_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.88	1.00
		SW109	**1302_SW109_180215**	**15 Feb 2018**	**585629**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.62	0.70
		SW109	**1302_SW109_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.03	1.14
		SW109	**1302_SW109_180301**	**01 Mar 2018**	**587405**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.73	0.86
		SW109	**1302_SW109_180308**	**08 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.87	1.02
		SW109	**1302_QCSW29_180308**	**08 Mar 2018**	**EB1806463**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	0.86
		SW109	**1302_QCSW28_180308**	**08 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.89	1.05
		SW109	**1302_SW109_180321**	**21 Mar 2018**	**590832**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.17	1.51
		SW109	**1302_SW109_180329**	**29 Mar 2018**	**592402**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.83	1.01
		SW109	**1302_SW109_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.27	1.50
		SW109	**1302_SW109_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.68	0.90
		SW109	**1302_SW109_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.8	0.96
		SW109	**1302_SW109_191115**	**15 Nov 2019**	**ES1938881**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.37	1.74
		SW109	**1302_SW109_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.54	0.61
		SW109	**1302_SW109_200415**	**16 Apr 2020**	**ES2012927**	0.24	0.32	0.27	0.57	0.31	0.74	0.68	0.28	0.68	1.16	11.30
		SW109	**1302_SW010_201107**	**07 Nov 2020**	**ES2040589**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.15	1.31
		SW109	**1302_SW109_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.49	0.53
		SW109	**1302_QC101_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.44	0.49
		SW109	**1302_SW109_210226**	**26 Feb 2021**	**778112**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.87	1.01
		SW109	**1302_SW109_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.75	0.93
		SW109	**1302_QC201_210428**	**28 Apr 2021**	**RN1314232**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.7	0.86
		SW109	**1302_QC101_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.77	0.94
		SW109	**1302_SW109_211112**	**12 Nov 2021**	**ES2203382**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.19	1.53
		SW109	**1302_SW109_220113**	**13 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.84	0.99
		SW109	**1302_SW109_220302**	**02 Mar 2022**	**ES2207387**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.56	0.68
		SW109	**1302_QC200_220302**	**02 Mar 2022**	**RN1345719**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.55	0.65
		SW109	**1302_QC100_220302**	**02 Mar 2022**	**ES2207387**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.57	0.70
		SW109	**1302_SW109_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.64	0.79
		SW109	**1302_SW109_220401**	**01 Apr 2022**	**ES2211499**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.85	1.04
		SW109	**1302_QC200_220401**	**01 Apr 2022**	**EB2209445**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.87	1.03
		SW109	**1302_QC100_220401**	**01 Apr 2022**	**ES2211499**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.79	0.95
		SW109	**1302_SW109_220428**	**28 Apr 2022**	**ES2214601**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.85	1.01
		SW109	**1302_QC100_220428**	**28 Apr 2022**	**ES2214601**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.92	1.08
		SW109	**1302_QC100_220428**	**28 Apr 2022**	**ES2214601**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.79	0.94
		SW109	**1302_SW109_220630**	**30 Jun 2022**	**ES2222496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.99	1.20
		SW109	**1302_QC200_220630**	**30 Jun 2022**	**EM2212650**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.77	0.93
		SW109	**1302_QC100_220630**	**30 Jun 2022**	**ES2222496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.91	1.10
		SW109	**1302_SW109_220826**	**26 Aug 2022**	**ES2230718**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.77	2.15
		SW109	**1302_QC200_220826**	**26 Aug 2022**	**RN1365240**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	1.19	1.43
		SW109	**1302_QC100_220826**	**26 Aug 2022**	**ES2230718**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.86	2.26
		SW109	**1302_SW023_221029**	**29 Oct 2022**	**ES2240280**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.65	0.75
		SW109	**1302_SW109_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.91	1.12
		SW109	**1302_SW109_221222**	**22 Dec 2022**	**ES2246451**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.71	0.83
		SW109	**1302_QC200_221222**	**22 Dec 2022**	**RN1377705**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.59	0.66
		SW109	**1302_QC100_221222**	**22 Dec 2022**	**ES2246451**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.8	0.93
		SW109	**1302_SW109_230125**	**25 Jan 2023**	**ES2302423**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.91	1.06
		SW109	**1302_SW109_230221**	**23 Feb 2023**	**ES2305982**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.36	0.41
		SW109	**1302_SW109_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.84	0.98
		SW109	**1302_SW109_230414**	**14 Apr 2023**	**ES2312445**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.78	0.93
		SW109	**1302_SW109_230830**	**30 Aug 2023**	**ES2329252**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.84	2.25
		SW109	**1302_QC200_230830**	**30 Aug 2023**	**RN1404541**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	1.11	1.37

						Iomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
		SW109	**1302_QC100_230830**	**30 Aug 2023**	**ES2329252**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.74	2.12
		SW109	**1302_SW109_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.42	1.77
		SW109	**1302_SW109_240124**	**24 Jan 2024**	**ES2402439**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.32	0.32
		SW109	**1302_SW109_2401215**	**15 Feb 2024**	**ES2404842**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.38	0.40
		SW109	**1302_SW109_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.56	0.65
		SW109	**1302_SW109_240430**	**30 Apr 2024**	**ES2414224**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.82	0.96
Rapid Creek - Pipe Track	**SW112**	**SW112**	**1302_SWRC12_170426**	**26 Apr 2017**	**544555**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.43	0.48
		SW112	**1302_SW112_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.1
		SW112	**1302_SW112_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.1
		SW112	**1302_QC03SW_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		SW112	**1302_SW112_171116**	**16 Nov 2017**	**575818**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.4	0.51
		SW112	**1302_SW112_171205**	**05 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	0.15
		SW112	**1302_SW112_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.13
		SW112	**1302_SW112_180307**	**07 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.91	1.07
		SW112	**1302_SW112_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.1
		SW112	**1302_SW112_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.78	0.92
		SW112	**1302_SW112_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.7	0.93
		SW112	**1302_SW112_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	0.36
		SW112	**1302_SW112_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.7	0.82
		SW112	**1302_SW112_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.96	1.15
		SW112	**1302_SW112_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09
		SW112	**1302_SW112_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.79	0.93
		SW112	**1302_SW112_220316**	**16 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.70
		SW112	**1302_SW022_221029**	**29 Oct 2022**	**ES2240280**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.3	1.56
		SW112	**1302_SW112_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.41	0.44
		SW112	**1302_SW112_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.52	0.59
		SW112	**1302_QC202_230328**	**28 Mar 2023**	**RN1389154**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.38	0.43
		SW112	**1302_QC102_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.55	0.62
		SW112	**1302_SW112_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.33	0.37
		SW112	**1302_SW112_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.57	0.66
Rapid Creek - Fishing Platform	**SW113**	**SW113**	**1302_SWRC13_170426**	**26 Apr 2017**	**544555**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.00
		SW113	**1302_SW113_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW113	**1302_SW113_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW113	**1302_SW113_171120**	**20 Nov 2017**	**575818**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		SW113	**1302_QC4SW_171120**	**20 Nov 2017**	**575818**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		SW113	**1302_SW113_171205**	**05 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.1
		SW113	**1302_SW113_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.12
		SW113	**1302_QCSW12_180109**	**09 Jan 2018**	**EB1801723**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.10
		SW113	**1302_QCSW11_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.12
		SW113	**1302_SW113_180307**	**07 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.54	0.61
		SW113	**1302_SW113_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW113	**1302_SW113_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	0.31
		SW113	**1302_SW113_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	0.28
		SW113	**1302_SW113_191113**	**13 Nov 2019**	**ES1938881**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW113	**1302_SW113_200122**	**22 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13
		SW113	**1302_SW113_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.29
		SW113	**1302_SW008_201104**	**04 Nov 2020**	**ES2040589**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.10
		SW113	**1302_SW113_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.24
		SW113	**1302_SW113_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW113	**1302_SW113_211203**	**03 Dec 2021**	**ES2203382**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05
		SW113	**1302_SW113_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.59	0.68
		SW113	**1302_SW113_220316**	**16 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	0.37
		SW113	**1302_SW020_221026**	**26 Oct 2022**	**ES2240280**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09
		SW113	**1302_SW113_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
		SW113	**1302_SW113_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.27	0.27
		SW113	**1302_SW113_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
		SW113	**1302_SW113_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.33	0.35
DIA drain to Rapid Creek - Near Dogs home	**SW114**	**SW114**	**1302_SW114_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		SW114	**1302_SW114_171205**	**05 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.51	1.78
		SW114	**1302_SW114_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.13	1.29
		SW114	**1302_QCSW09_180109**	**09 Jan 2018**	**EB1801723**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.05	1.22
		SW114	**1302_QCSW08_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.11	1.26
		SW114	**1302_SW114_180308**	**08 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6	7.10
		SW114	**1302_SW114_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.99	1.15
		SW114	**1302_SW114_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2	2.69
		SW114	**1302_SW114_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.38	2.83
		SW114	**1302_SW114_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.17
		SW114	**1302_SW114_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.03	3.74
		SW114	**1302_SW114_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW114	**1302_SW114_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.71	2.12
		SW114	**1302_SW114_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.79	5.83
		SW114	**1302_SW114_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.36	5.57
		SW114	**1302_SW114_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW114	**1302_SW114_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.37	6.51

						Iomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
		SW114	**1302_SW114_231213**	**13 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW114	**1302_SW114_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.74	4.56
		SW114	**1302_QC102_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.59	4.35
DIA drain to Rapid Creek	**SW115**	**SW115**	**1302_SW001_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.10
		SW115	**1302_SW115_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW115	**1302_SW115_171205**	**05 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.2	3.82
		SW115	**QCSW07_171205**	**05 Dec 2017**	**EB1726099**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.4	4.09
		SW115	**1302_QCSW06_171205**	**05 Dec 2017**	**576146**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.3	3.95
		SW115	**1302_SW115_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.7	5.49
		SW115	**1302_SW115_180308**	**08 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.8	4.40
		SW115	**1302_SW115_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW115	**1302_SW115_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.24	3.20
		SW115	**1302_SW115_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.67	3.24
		SW115	**1302_SW115_ 200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.51	2.98
		SW115	**1302_SW115_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.42	1.67
		SW115	**1302_SW115_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW115	**1302_SW115_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
		SW115	**1302_SW115_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.69	0.83
		SW115	**1302_SW115_220314**	**14 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.65	2.05
		SW115	**1302_SW115_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW115	**1302_SW115_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW115	**1302_SW115_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.01
		SW115	**1302_SW115_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
Ludmilla Creek (Dick Ward Drive)	**SW120**	**SW120**	**1302_SWLC02_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.02
		SW120	**1302_QC2SW_20170629**	**29 Jun 2017**	**EM1708832**	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05
		SW120	**1302_SW120_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.33	0.38
		SW120	**1302_SW120_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.33	0.40
		SW120	**1302_SW120_171206**	**06 Dec 2017**	**576509**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.28	0.30
		SW120	**1302_SW120_180110**	**10 Jan 2018**	**580118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.46	1.77
		SW120	**1302_SW120_180130**	**30 Jan 2018**	**582713**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.02	2.39
		SW120	**1302_SW120_180306**	**06 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.25	2.69
		SW120	**1302_SW120_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.22	0.26
		SW120	**QCSW3_181211**	**11 Dec 2018**	**EB1830722**	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	0.16	0.16
		SW120	**1302_QCSW4_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	0.27
		SW120	**1302_SW120_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.83	2.32
		SW120	**1302_SW120_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.8	2.99
		SW120	**1302_SW120_191114**	**14 Nov 2019**	**ES1938881**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.72	0.86
		SW120	**1302_SW120_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.69
		SW120	**1302_SW120_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.76	2.09
		SW120	**1302_QC201_200415**	**16 Apr 2020**	**RN1271623**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	1.52	1.79
		SW120	**1302_QC101_201415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.73	2.02
		SW120	**1302_SW009_201103**	**03 Nov 2020**	**ES2040589**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.24	1.36
		SW120	**1302_SW120_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.66
		SW120	**1302_SW120_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW120	**1302_SW120_211109**	**09 Nov 2021**	**ES2203382**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.89	1.08
		SW120	**1302_SW120_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.43	1.70
		SW120	**1302_SW120_220315**	**15 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.88	1.05
		SW120	**1302_SW120_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.86	1.03
		SW120	**1302_SW120_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.53	0.65
		SW120	**1302_SW120_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.48	0.63
		SW120	**1302_SW120_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.95	1.33
Ludmilla Creek (Boat Ramp)	**SW124**	**SW124**	**1302_SWLC05_170425**	**25 Apr 2017**	**544555**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.00
		SW124	**1302_SWLC05_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.02
		SW124	**1302_SW124_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW124	**1302_SW124_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW124	**1302_SW124_171208**	**08 Dec 2017**	**577342**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.1
		SW124	**1302_SW124_180130**	**30 Jan 2018**	**582713**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.1
		SW124	**1302_SW124_180306**	**06 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW124	**1302_SW124_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW124	**1302_SW124_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.1
		SW124	**1302_SW124_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.1
		SW124	**1302_SW124_191112**	**12 Nov 2019**	**ES1938881**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03
		SW124	**1302_QC106_191112**	**12 Nov 2019**	**ES1938881**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03
		SW124	**1302_SW124_200122**	**22 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09
		SW124	**1302_SW124_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
		SW124	**1302_SW007_201103**	**03 Nov 2020**	**ES2040589**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW124	**1302_QC121_201103**	**03 Nov 2020**	**ES2040589**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW124	**1302_SW124_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09
		SW124	**1302_SW124_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW124	**1302_QC200_210428**	**28 Apr 2021**	**RN1314232**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.02	0.00
		SW124	**1302_QC100_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW124	**1302_SW124_211203**	**03 Dec 2021**	**ES2203382**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07
		SW124	**1302_QC130_211203**	**03 Dec 2021**	**ES2203382**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
		SW124	**1302_SW124_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.76	0.83

						Iomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
		SW124	**1302_SW124_220316**	**16 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09
		SW124	**1302_SW019_221025**	**25 Oct 2022**	**ES2240280**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW124	**1302_QC139_221025**	**25 Oct 2022**	**ES2240280**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW124	**1302_SW124_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
		SW124	**1302_SW124_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.10
		SW124	**1302_SW124_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW124	**1302_SW124_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
Ludmilla Creek (Accessible Drain)	**SW125**	**SW125**	**1302_SW125_171206**	**06 Dec 2017**	**576509**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.1	4.82
		SW125	**1302_SW125_180110**	**10 Jan 2018**	**580118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.4	6.28
		SW125	**1302_SW125_180216**	**16 Feb 2018**	**585629**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.9	6.89
		SW125	**1302_SW125_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.63	0.70
		SW125	**1302_SW125_180301**	**01 Mar 2018**	**587405**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.4	9.06
		SW125	**1302_SW125_180307**	**07 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10.2	12.66
		SW125	**1302_SW125_180321**	**21 Mar 2018**	**590832**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.4	9.04
		SW125	**1302_QCSW04_180321**	**21 Mar 2018**	**EB1807722**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.42	6.73
		SW125	**1302_QCSW03_180321**	**21 Mar 2018**	**590832**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.1	8.59
		SW125	**1302_SW125_180329**	**29 Mar 2018**	**592402**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6.2	7.52
		SW125	**1302_QCSW06_180329**	**29 Mar 2018**	**EB1808692**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	5.83	7.28
		SW125	**1302_QCSW05_180329**	**29 Mar 2018**	**592402**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6.7	8.19
		SW125	**1302_SW125_180412**	**12 Apr 2018**	**594148**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6.9	8.36
		SW125	**1302_SW125_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6	7.00
		SW125	**1302_SW125_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.9	5.93
		SW125	**1302_SW125_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.7	7.47
		SW125	**1302_SW125_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.83	3.51
		SW125	**1302_SW125_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.25	5.07
		SW125	**1302_SW125_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.21	4.95
		SW125	**1302_SW125_210226**	**26 Feb 2021**	**778112**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.8	5.73
		SW125	**1302_SW125_210318**	**18 Mar 2021**	**785443**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.1	4.88
		SW125	**1302_SW125_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.87	4.67
		SW125	**1302_SW125_220315**	**15 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.36	5.25
		SW125	**1302_SW021_221029**	**29 Oct 2022**	**ES2240280**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.45
		SW125	**1302_SW125_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.02	3.58
		SW125	**1302_QC200_221123**	**23 Nov 2022**	**RN1374784**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	2.12	2.52
		SW125	**1302_QC100_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.45	4.09
		SW125	**1302_SW125_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	4.6	7.03
		SW125	**1302_SW125_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.24	1.87
		SW125	**1302_SW125_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	3.74	5.36
Top of Reichardt Creek - east arm	**SW132**	**SW132**	**1302_SWRCC02_170426**	**26 Apr 2017**	**544555**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.39	0.41
		SW132	**1302_SWRCC02_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	0.09
		SW132	**1302_SW132_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.1
		SW132	**1302_SW132_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.1
		SW132	**1302_SW132_171116**	**16 Nov 2017**	**575818**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.1
		SW132	**1302_SW132_171208**	**08 Dec 2017**	**577342**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.1
		SW132	**1302_SW132_180110**	**10 Jan 2018**	**580118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.1
		SW132	**1302_SW132_180307**	**07 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.28	0.29
		SW132	**1302_QCSW15_180307**	**07 Mar 2018**	**EB1806463**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	6.94	8.16
		SW132	**1302_QCSW14_180307**	**07 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.25	0.26
		SW132	**1302_SW132_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.10
		SW132	**1302_SW132_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.13
		SW132	**1302_SW132_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.14
		SW132	**QCSW02_190319**	**19 Mar 2019**	**EB1907349**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.14
		SW132	**1302_QCSW01_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.11
		SW132	**1302_QCSW01_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.14
		SW132	**1302_SW132_200123**	**23 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03
		SW132	**1302_SW132_200416**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.21
		SW132	**1302_SW132_201217**	**17 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11
		SW132	**1302_SW132_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.16
		SW132	**1302_SW132_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.18
		SW132	**1302_SW132_220315**	**15 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.20
		SW132	**1302_SW132_221124**	**24 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.10
		SW132	**1302_QC200_221124**	**24 Nov 2022**	**RN1374784**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.075	0.08
		SW132	**1302_QC100_221124**	**24 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.10
		SW132	**1302_SW132_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.30
		SW132	**1302_QC200_230327**	**27 Mar 2023**	**RN1389154**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.216	0.22
		SW132	**1302_QC100_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.32	0.32
		SW132	**1302_SW132_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
		SW132	**1302_SW132_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.25
Top of Reichardt Creek - west arm	**SW133**	**SW133**	**1302_SWRCC01_170426**	**26 Apr 2017**	**544555**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	0.33
		SW133	**1302_SWRCC01_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.34	0.41
		SW133	**1302_SW133_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.26	0.40
		SW133	**1302_SW133_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.21
		SW133	**1302_SW133_171208**	**08 Dec 2017**	**577342**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	0.45
		SW133	**1302_SW133_180111**	**11 Jan 2018**	**580281**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.47
		SW133	**1302_SW133_180307**	**07 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	0.30

						lomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
		SW133	**1302_SW133_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.26	0.42
		SW133	**1302_SW133_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.6	7.19
		SW133	**1302_SW133_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.4	6.51
		SW133	**1302_SW133_200123**	**23 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.15
		SW133	**1302_QC105_200123**	**23 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.14
		SW133	**1302_SW133_200416**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.20
		SW133	**1302_SW133_201217**	**17 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.22
		SW133	**1302_SW133_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW133	**1302_SW133_220114**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.21
		SW133	**1302_SW133_220315**	**15 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.19
		SW133	**1302_SW133_221124**	**24 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.14
		SW133	**1302_SW133_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.25
		SW133	**1302_SW133_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW133	**1302_QC200_231206**	**06 Dec 2023**	**RN1414076**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.038	0.04
		SW133	**1302_QC100_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
		SW133	**1302_QC200_231213**	**13 Dec 2023**	**RN1415182**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.062	0.06
		SW133	**1302_SW133_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03
		SW133	**1302_QC100_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
Drain to Sadgroves Creek	**SW143**	**SW143**	**1302_SW143_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.1
		SW143	**1302_SW143_170907**	**08 Sep 2017**	**563049**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.00
		SW143	**1302_SW143_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.1
		SW143	**1302_QC01SW_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	<0.1
		SW143	**1302_SW143_171117**	**17 Nov 2017**	**575818**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.1
		SW143	**1302_QC5SW_171117**	**17 Nov 2017**	**575818**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	<0.1
		SW143	**1302_SW143_171208**	**08 Dec 2017**	**577342**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	0.22
		SW143	**1302_SW143_180111**	**11 Jan 2018**	**580281**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.16	0.28
		SW143	**1302_SW143_180216**	**16 Feb 2018**	**585629**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	0.15
		SW143	**1302_SW143_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1
		SW143	**1302_SW143_180301**	**01 Mar 2018**	**587405**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.15
		SW143	**1302_SW143_180307**	**07 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.11
		SW143	**1302_SW143_180321**	**21 Mar 2018**	**590832**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.14
		SW143	**1302_QCSW06_180321**	**21 Mar 2018**	**EB1807722**	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05
		SW143	**1302_QCSW05_180321**	**21 Mar 2018**	**590832**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.14
		SW143	**1302_SW143_180329**	**29 Mar 2018**	**592402**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6.7	8.22
		SW143	**1302_SW143_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.1
		SW143	**1302_SW143_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	0.20
		SW143	**1302_SW143_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	0.61
		SW143	**1302_SW143_200416**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.25
		SW143	**1302_SW143_201217**	**17 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.40
		SW143	**1302_SW143_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW143	**1302_SW143_22011**	**14 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.52
		SW143	**1302_SW143_220316**	**16 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.40
		SW143	**1302_SW143_221124**	**24 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05
		SW143	**1302_SW143_230328**	**28 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.33
		SW143	**1302_SW143_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.15
		SW143	**1302_SW143_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08
DIA drain to Rapid Creek - off Charles Eaton Drive	**SW168**	**SW168**	**1302_SW002_20170629**	**29 Jun 2017**	**553118**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.6	2.88
		SW168	**1302_SW168_170726**	**26 Jul 2017**	**556897**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.36	2.95
		SW168	**1302_SW168_171024**	**24 Oct 2017**	**569492**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.16	2.82
		SW168	**1302_SW168_171207**	**07 Dec 2017**	**577342**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.53	3.01
		SW168	**1302_SW168_180109**	**09 Jan 2018**	**579890**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.9	2.29
		SW168	**1302_SW168_180215**	**15 Feb 2018**	**585629**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.12	2.63
		SW168	**1302_SW168_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.24	1.34
		SW168	**QCSW06_180222**	**22 Feb 2018**	**EB1805245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.89	3.37
		SW168	**1302_QCSW05_180222**	**22 Feb 2018**	**586288**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	1.21
		SW168	**1302_SW168_180301**	**01 Mar 2018**	**587405**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.85	2.33
		SW168	**1302_SW168_180308**	**08 Mar 2018**	**588748**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.36	1.76
		SW168	**1302_QCSW05_180315**	**15 Mar 2018**	**EB1807098**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.92	1.18
		SW168	**1302_SW168_180321**	**21 Mar 2018**	**590832**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.17	1.51
		SW168	**1302_SW168_180329**	**29 Mar 2018**	**592402**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.11	1.40
		SW168	**1302_QCSW04_180329**	**29 Mar 2018**	**EB1808692**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.96	1.26
		SW168	**1302_QCSW03_180329**	**29 Mar 2018**	**592402**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.21	1.54
		SW168	**1302_SW168_181211**	**11 Dec 2018**	**632630**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.1	3.62
		SW168	**1302_SW168_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.05	1.56
		SW168	**1302_SW168_190319**	**19 Mar 2019**	**646224**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.15	1.43
		SW168	**1302_SW168_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.14	1.41
		SW168	**1302_QC103_200121**	**21 Jan 2020**	**ES2002245**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.1	1.34
		SW168	**1302_SW168_200415**	**16 Apr 2020**	**ES2012927**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.28	1.65
		SW168	**1302_SW168_201216**	**16 Dec 2020**	**ES2045380**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	0.34
		SW168	**1302_SW168_210428**	**28 Apr 2021**	**ES2116496**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.33	1.87
		SW168	**1302_SW168_220113**	**13 Jan 2022**	**ES2201342**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.32	1.63
		SW168	**1302_SW168_220315**	**15 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.77	1.07
		SW168	**1302_QC201_220315**	**15 Mar 2022**	**RN1348951**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.91	1.01
		SW168	**1302_QC101_220315**	**15 Mar 2022**	**ES2209679**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.76	1.04

						Iomer Sulfonic Acids		PFAS - Perfluoroalkyl Sulfonamides							PFAS	
						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
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 99%																
PFAS NEMP 2020 Recreational Water															2	
Location	**Location Code**		**Field ID**	**Date**	**Lab Report Number**											
		SW168	**1302_SW168_221123**	**23 Nov 2022**	**ES2242803**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.82	2.30
		SW168	**1302_SW168_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.03	1.36
		SW168	**1302_SW168_231206**	**06 Dec 2023**	**ES2342430**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.72	2.12
		SW168	**1302_SW168_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.95	1.26
		SW168	**1302_QC101_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1	1.34
Draid leading from CFTA	**SW300**	**SW300**	**1302_SW300_210226**	**26 Feb 2021**	**778112**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.76	5.38
		SW300	**1302_SW300_220119**	**19 Jan 2022**	**858872**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	36.3	42.09
		SW300	**1302_SW300_220302**	**02 Mar 2022**	**ES2207387**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.16	4.85
		SW300	**1302_SW300_220401**	**01 Apr 2022**	**ES2211499**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.46	3.07
		SW300	**1302_SW300_220406**	**06 Apr 2022**	**880007**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.24	2.36
		SW300	**1302_SW300_221125**	**25 Nov 2022**	**ES2243233**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW300	**1302_SW300_230125**	**25 Jan 2023**	**ES2302423**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.64	3.51
		SW300	**1302_QC200_230125**	**25 Jan 2023**	**RN1381361**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.62	0.00
		SW300	**1302_QC100_230125**	**25 Jan 2023**	**ES2302423**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.72	3.59
		SW300	**1302_QC200_230221**	**12 Feb 2023**	**RN1384540**	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.31	0.00
		SW300	**1302_SW300_230221**	**21 Feb 2023**	**ES2305982**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.36
		SW300	**1302_QC100_230221**	**21 Feb 2023**	**ES2305982**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.42
		SW300	**1302_SW300_230327**	**27 Mar 2023**	**ES2311000**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.14	4.57
		SW300	**1302_SW300_230414**	**14 Apr 2023**	**ES2312445**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	2.20	4.53
		SW300	**1302_SW300_231213**	**13 Dec 2023**	**ES2343471**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05
		SW300	**1302_SW300_240124**	**24 Jan 2024**	**ES2402439**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
		SW300	**1302_SW300_240215**	**15 Feb 2024**	**ES2404842**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.26	2.23
		SW300	**1302_SW300_240306**	**06 Mar 2024**	**ES2407639**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.57	3.36

Environmental Standards

HEPA, January 2020, PFAS NEMP 2020 Freshwater 99%

HEPA, January 2020, PFAS NEMP 2020 Recreational Water

							PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids										
						Weight of Sample Prepared	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
						g	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						0.1	0.0005	0.0005	0.0003	0.0005	0.0003	0.0003	0.001	0.0005	0.0005	0.0005	0.0001	0.0001	0.0005	0.0005	0.0005	0.0005	0.0005
ESANZ 2017 2-6 years Curstaceans (invertebrate)									0.065		0.062						10						
FSANZ 2017 2-6 years Finfish (fish)									0.0052		0.0052												
Location Code	Field ID	Date	Fauna Group	Species	Lab Report Number	Sample Type																	
BIO007	1302_BIOAFA123_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	11.1	<0.001	<0.001	0.001	<0.001	0.017	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA120_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	117	<0.001	<0.001	0.001	<0.001	0.014	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA122_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	37.2	<0.001	<0.001	0.001	<0.001	0.014	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA129_191113	13 Nov 2019	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES1938881	Normal	62.0	<0.001	<0.001	<0.001	<0.001	0.014	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA121_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	67.9	<0.001	<0.001	0.001	<0.001	0.011	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA124_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	26.8	<0.001	<0.001	0.001	<0.001	0.01	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA138_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	42.4	<0.001	<0.001	0.004	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA127_191113	13 Nov 2019	Fish	Tarpon (Megalops cyprinoides)	ES1938881	Normal	51.2	<0.001	<0.001	0.004	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA131_191113	13 Nov 2019	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES1938881	Normal	73.4	<0.001	<0.001	<0.001	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA136_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	65.0	<0.001	<0.001	0.004	<0.001	0.005	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA130_191113	13 Nov 2019	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES1938881	Normal	56.2	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA126_191113	13 Nov 2019	Fish	Tarpon (Megalops cyprinoides)	ES1938881	Normal	86.6	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA128_191113	13 Nov 2019	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES1938881	Normal	60.4	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA137_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	73.4	<0.001	<0.001	0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA125_191113	13 Nov 2019	Fish	Tarpon (Megalops cyprinoides)	ES1938881	Normal	92.8	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA179_201104	04 Nov 2020	Fish	Tarpon (Megalops cyprinoides)	ES2040589	Normal	71.3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA186_201104	04 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2040589	Normal	116	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA187_201104	04 Nov 2020	Fish	Milkfish (Chanos chanos)	ES2040589	Normal	110	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA193_201104	04 Nov 2020	Fish	Trevally (Caranx sp.)	ES2040589	Normal	42.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA194_201104	04 Nov 2020	Fish	Ponyfish (Leiognathus equulus)	ES2040589	Normal	51.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA190_201104	04 Nov 2020	Fish	Milkfish (Chanos chanos)	ES2040589	Normal	76.4	<0.001	<0.001	<0.001	<0.001	0.019	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA189_201104	04 Nov 2020	Fish	Milkfish (Chanos chanos)	ES2040589	Normal	102	<0.001	<0.001	<0.001	<0.001	0.015	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA183_201104	04 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2040589	Normal	85.0	<0.001	<0.001	<0.001	<0.001	0.009	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA195_201104	04 Nov 2020	Fish	Sea Mullet (Mugil cephalus)	ES2040589	Normal	46.3	<0.001	<0.001	<0.001	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA181_201104	04 Nov 2020	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2040589	Normal	62.3	<0.001	<0.001	0.002	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA191_201104	04 Nov 2020	Fish	Trevally (Caranx sp.)	ES2040589	Normal	72.4	<0.001	<0.001	<0.001	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA184_201104	04 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2040589	Normal	82.6	<0.001	<0.001	<0.001	<0.001	0.005	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA192_201104	04 Nov 2020	Fish	Trevally (Caranx sp.)	ES2040589	Normal	39.8	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA182_201104	04 Nov 2020	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2040589	Normal	52.4	<0.001	<0.001	<0.001	<0.001	0.003	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA180_201104	04 Nov 2020	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2040589	Normal	66.0	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA178_201104	04 Nov 2020	Fish	Blue Salmon (Eleutheronema tetradactylum)	ES2040589	Normal	131	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA220_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2203382	Normal	66.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA221_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2203382	Normal	37.7	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA225_211125	25 Nov 2021	Fish	Sicklefish (Drepane punctata)	ES2203382	Normal	52.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA227_211125	25 Nov 2021	Fish	Scat (Scatophagus sp.)	ES2203382	Normal	70.4	<0.001	<0.001	<0.001	<0.001	0.009	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA228_211125	25 Nov 2021	Fish	Scat (Scatophagus sp.)	ES2203382	Normal	50.0	<0.001	<0.001	<0.001	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA226_211125	25 Nov 2021	Fish	Ponyfish (Leiognathus equulus)	ES2203382	Normal	57.7	<0.001	<0.001	<0.001	<0.001	0.005	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA229_211125	25 Nov 2021	Fish	Scat (Scatophagus sp.)	ES2203382	Normal	62.9	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA219_211125	25 Nov 2021	Fish	Sea Mullet (Mugil cephalus)	ES2203382	Normal	88.9	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA223_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2203382	Normal	40.0	<0.001	<0.001	0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA224_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2203382	Normal	32.5	<0.001	<0.001	0.002	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA218_211125	25 Nov 2021	Fish	Sea Mullet (Mugil cephalus)	ES2203382	Normal	100	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA222_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2203382	Normal	45.6	<0.001	<0.001	0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA234_211203	03 Dec 2021	Fish	Northern Whiting (Sillago sihama)	ES2203382	Normal	17.8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA235_211203	03 Dec 2021	Fish	Northern Whiting (Sillago sihama)	ES2203382	Normal	16.3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA236_211203	03 Dec 2021	Fish	Northern Whiting (Sillago sihama)	ES2203382	Normal	30.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA231_211203	03 Dec 2021	Fish	Sea Mullet (Mugil cephalus)	ES2203382	Normal	38.3	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA230_211203	03 Dec 2021	Fish	Sea Mullet (Mugil cephalus)	ES2203382	Normal	45.4	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA232_211203	03 Dec 2021	Fish	Sea Mullet (Mugil cephalus)	ES2203382	Normal	23.3	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA233_211203	03 Dec 2021	Fish	Garfish (Hemiramphidae (family))	ES2203382	Normal	11.7	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA290_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Normal	99.8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA295_221026	26 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2240147	Normal	102	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA299_221026	26 Oct 2022	Fish	Banded Archerfish (Toxotes jaculatrix)	ES2240147	Normal	41.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA301_221026	26 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	ES2240147	Normal	94.8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC145_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Field_D	95.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA305_221026	26 Oct 2022	Crustacean	Orange Mud Crab (Scylla olivacea)	ES2240147	Normal	68.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA297_221026	26 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2240147	Normal	54.4	<0.001	<0.001	0.001	<0.001	0.035	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA296_221026	26 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2240147	Normal	58.2	<0.001	<0.001	<0.001	<0.001	0.03	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA302_221026	26 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	ES2240147	Normal	13.6	<0.001	<0.001	<0.001	<0.001	0.009	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC146_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Field_D	106	<0.001	<0.001	<0.001	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA292_221026	26 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2240147	Normal	99.0	<0.001	<0.001	0.004	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA291_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Normal	116	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA294_221026	26 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2240147	Normal	56.8	<0.001	<0.001	0.002	<0.001	0.003	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA289_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Normal	131	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA293_221026	26 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2240147	Normal	69.3	<0.001	<0.001	0.002	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA298_221026	26 Oct 2022	Fish	Banded Archerfish (Toxotes jaculatrix)	ES2240147	Normal	40.2	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA303_221026	26 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	ES2240147	Normal	11.4	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA304_221026	26 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	ES2240147	Normal	7.4	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC144_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Field_D	126	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC147_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Field_D	99.9	<0.001	<0.001	0.002	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA300_221026	26 Oct 2022	Fish	Sicklefish (Drepane punctata)	ES2240147	Normal	62.9	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA345_231018	18 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	ES2337477	Normal	56.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA346_231018	18 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	ES2337477	Normal	45.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA347_231018	18 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	ES2337477	Normal	40.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA337_231018	18 Oct 2023	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2337477	Normal	43.0	<0.001	<0.001	<0.001	<0.001	0.084	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA336_231018	18 Oct 2023	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2337477	Normal	38.0	<0.001	<0.001	<0.001	<0.001	0.046	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA335_231018	18 Oct 2023	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2337477	Normal	50.0	<0.001	<0.001	<0.001	<0.001	0.025	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA334_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2337477	Normal	52.0	<0.001	<0.001	0.003	<0.001	0.017	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC155_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2337477	Field_D	43.5	<0.001	<0.001	0.003	<0.001	0.017	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA333_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2337477	Normal	82.3	<0.001	<0.001	0.001	<0.001	0.014	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA338_231018	18 Oct 2023	Fish	Banded Archerfish (Toxotes jaculatrix)	ES2337477	Normal	64.0	<0.001	<0.001	<0.001	<0.001	0.013	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA344_231018	18 Oct 2023	Fish	Tarpon (Megalops cyprinoides)	ES2337477	Normal	57.0	<0.001	<0.001	0.002	<0.001	0.013	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC154_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2337477	Field_D	41.1	<0.001	<0.001	0.002	<0.001	0.012	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA339_231018	18 Oct 2023	Fish	Milkfish (Chanos chanos)	ES2337477	Normal	45.0	<0.001	<0.001	<0.001	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA332_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2337477	Normal	71.2	<0.001	<0.001	0.001	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC204_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	RN1417767	Interlab_D	-	<0.0005	<0.0005	0.0011	<0.0005	0.0057	<0.0003	<0.001	<0.0005	<0.0005	<0.0005	0.00015	0.00024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	1302_BIOAFA341_231018	18 Oct 2023	Fish	Milkfish (Chanos chanos)	ES2337477	Normal	42.0	<0.001	<0.001	<0.001	<0.001	0.005	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001

								PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids										
							Weight of Sample Prepared	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
							g	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							0.1	0.0005	0.0005	0.0003	0.0005	0.0003	0.0003	0.001	0.0005	0.0005	0.0005	0.0001	0.0001	0.0005	0.0005	0.0005	0.0005	0.0005
ESANZ 2017 2-6 years Curstaceans (invertebrate)										0.065		0.062						10						
FSANZ 2017 2-6 years Finfish (fish)										0.0052		0.0052												
Location Code	**Field ID**	**Date**	**Fauna Group**	**Species**	**Lab Report Number**	**Sample Type**																		
	1302_QC152_231018	18 Oct 2023	Fish	Mangrove Jack (Lutjanus argentimaculatus)	ES2337477	Field_D	59.2	<0.001	<0.001	<0.001	<0.001	0.005	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC153_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2337477	Field_D	45.8	<0.001	<0.001	<0.001	<0.001	0.005	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC203_231018	18 Oct 2023	Fish	Mangrove Jack (Lutjanus argentimaculatus)	RN1417767	Interlab_D	-	<0.0005	<0.0005	<0.0003	<0.0005	0.0041	<0.0003	<0.001	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	1302_BIOAFA340_231018	18 Oct 2023	Fish	Milkfish (Chanos chanos)	ES2337477	Normal	39.0	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA331_231018	18 Oct 2023	Fish	Mangrove Jack (Lutjanus argentimaculatus)	ES2337477	Normal	63.3	<0.001	<0.001	<0.001	<0.001	0.003	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA342_231018	18 Oct 2023	Fish	Tarpon (Megalops cyprinoides)	ES2337477	Normal	65.0	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA343_231018	18 Oct 2023	Fish	Tarpon (Megalops cyprinoides)	ES2337477	Normal	82.0	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
BIO016	1302_BIOAFA149_191115	15 Nov 2019	Invertebrate	Long Bum (Telescopium telescopium)	ES1938881	Normal	27.3	<0.001	<0.001	0.001	<0.001	0.009	<0.002	<0.005	<0.002	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA150_191115	15 Nov 2019	Invertebrate	Long Bum (Telescopium telescopium)	ES1938881	Normal	40.7	<0.001	<0.001	<0.001	<0.001	0.011	<0.002	<0.005	<0.002	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA151_191115	15 Nov 2019	Invertebrate	Long Bum (Telescopium telescopium)	ES1938881	Normal	29.4	<0.001	<0.001	0.002	<0.001	0.025	<0.002	<0.005	<0.002	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA152_191115	15 Nov 2019	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES1938881	Normal	26.7	<0.001	<0.001	<0.001	<0.001	0.01	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA153_191115	15 Nov 2019	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES1938881	Normal	28.7	<0.001	<0.001	<0.001	<0.001	0.009	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA173_201103	03 Nov 2020	Invertebrate	Long Bum (Telescopium telescopium)	ES2040589	Normal	38.4	<0.001	<0.001	0.002	<0.001	0.027	<0.002	<0.005	<0.002	<0.001	<0.001	0.007	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA174_201103	03 Nov 2020	Invertebrate	Long Bum (Telescopium telescopium)	ES2040589	Normal	47.3	<0.001	<0.001	0.002	<0.001	0.03	<0.002	<0.005	<0.002	<0.001	<0.001	0.008	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA175_201103	03 Nov 2020	Invertebrate	Long Bum (Telescopium telescopium)	ES2040589	Normal	45.1	<0.001	<0.001	0.001	<0.001	0.014	<0.002	<0.005	<0.002	<0.001	<0.001	0.006	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA176_201103	03 Nov 2020	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES2040589	Normal	45.8	<0.001	<0.001	<0.001	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA177_201103	03 Nov 2020	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES2040589	Normal	44.4	<0.001	<0.001	<0.001	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA204_211108	08 Nov 2021	Invertebrate	Long Bum (Telescopium telescopium)	ES2203382	Normal	45.7	<0.001	<0.001	<0.001	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA284_221029	29 Oct 2022	Invertebrate	Long Bum (Telescopium telescopium)	ES2240147	Normal	30.1	<0.001	<0.001	<0.001	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA285_221029	29 Oct 2022	Invertebrate	Long Bum (Telescopium telescopium)	ES2240147	Normal	35.0	<0.001	<0.001	<0.001	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA286_221029	29 Oct 2022	Invertebrate	Long Bum (Telescopium telescopium)	ES2240147	Normal	31.5	<0.001	<0.001	<0.001	<0.001	0.018	<0.002	<0.005	<0.002	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA287_221029	29 Oct 2022	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES2240147	Normal	57.9	<0.001	<0.001	<0.001	<0.001	0.016	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA288_221029	29 Oct 2022	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES2240147	Normal	60.4	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA348_231017	17 Oct 2023	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES2337477	Normal	83.0	<0.001	<0.001	<0.001	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA349_231017	17 Oct 2023	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES2337477	Normal	71.0	<0.001	<0.001	<0.001	<0.001	0.012	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA350_231017	17 Oct 2023	Invertebrate	Long Bum (Telescopium telescopium)	ES2337477	Normal	47.0	<0.001	<0.001	0.001	<0.001	0.016	<0.002	<0.005	<0.002	<0.001	<0.001	0.009	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA351_231017	17 Oct 2023	Invertebrate	Long Bum (Telescopium telescopium)	ES2337477	Normal	51.0	<0.001	<0.001	<0.001	<0.001	0.016	<0.002	<0.005	<0.002	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA352_231017	17 Oct 2023	Invertebrate	Long Bum (Telescopium telescopium)	ES2337477	Normal	55.0	<0.001	<0.001	<0.001	<0.001	0.018	<0.002	<0.005	<0.002	<0.001	<0.001	0.007	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
BIO017	1302_BIOAFA205_211108	08 Nov 2021	Invertebrate	Long Bum (Telescopium telescopium)	ES2203382	Normal	44.7	<0.001	<0.001	<0.001	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
BIO018	1302_BIOAFA101_191112	12 Nov 2019	Fish	Barramundi (Lates calcarifer)	ES1938881	Normal	119	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA112_191112	12 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	55.0	<0.001	<0.001	0.014	<0.001	0.055	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA107_191112	12 Nov 2019	Fish	Eel-tailed Catfish (Plotosus canius)	ES1938881	Normal	82.1	<0.001	<0.001	0.005	<0.001	0.043	<0.002	<0.005	<0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA108_191112	12 Nov 2019	Fish	Ponyfish (Leiognathus equulus)	ES1938881	Normal	56.4	<0.001	<0.001	0.005	<0.001	0.04	<0.002	<0.005	<0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA105_191112	12 Nov 2019	Fish	Blue Salmon (Eleutheronema tetradactylum)	ES1938881	Normal	102	<0.001	<0.001	0.003	<0.001	0.027	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA113_191112	12 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	60.2	<0.001	<0.001	0.003	<0.001	0.026	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA106_191112	12 Nov 2019	Fish	Blue Salmon (Eleutheronema tetradactylum)	ES1938881	Normal	72.1	<0.001	<0.001	0.003	<0.001	0.021	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA104_191112	12 Nov 2019	Fish	Blue Salmon (Eleutheronema tetradactylum)	ES1938881	Normal	79.5	<0.001	<0.001	0.002	<0.001	0.018	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA111_191112	12 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	45.5	<0.001	<0.001	0.002	<0.001	0.017	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA114_191112	12 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES1938881	Normal	51.9	<0.001	<0.001	0.002	<0.001	0.012	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA100_191112	12 Nov 2019	Fish	Queenfish (Scomberoides commersonnianus)	ES1938881	Normal	77.4	<0.001	<0.001	<0.001	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA102_191112	12 Nov 2019	Fish	Barramundi (Lates calcarifer)	ES1938881	Normal	115	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA103_191112	12 Nov 2019	Fish	Barramundi (Lates calcarifer)	ES1938881	Normal	108	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA109_191112	12 Nov 2019	Crustacean	Sand Crab (Portunus pelagicus)	ES1938881	Normal	57.2	<0.001	0.001	0.005	<0.001	0.031	<0.002	<0.005	<0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA110_191112	12 Nov 2019	Crustacean	Sand Crab (Portunus pelagicus)	ES1938881	Normal	57.4	<0.001	<0.001	0.004	<0.001	0.027	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA154_201103	03 Nov 2020	Fish	Pikey Bream (Acanthopagrus pacificus)	ES2040589	Normal	68.8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA155_201103	03 Nov 2020	Fish	Blue Salmon (Eleutheronema tetradactylum)	ES2040589	Normal	67.8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA159_201103	03 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2040589	Normal	43.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA160_201103	03 Nov 2020	Fish	Hawaiian Giant Herring (Elops hawaiensis)	ES2040589	Normal	66.7	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA162_201103	03 Nov 2020	Fish	Archerfish (Toxotes chatareus)	ES2040589	Normal	67.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA166_201103	03 Nov 2020	Fish	Trevally (Caranx sp.)	ES2040589	Normal	91.7	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA170_201103	03 Nov 2020	Fish	Sea Mullet (Mugil cephalus)	ES2040589	Normal	88.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA172_201103	03 Nov 2020	Fish	Sea Mullet (Mugil cephalus)	ES2040589	Normal	61.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA167_201103	03 Nov 2020	Fish	Ponyfish (Leiognathus equulus)	ES2040589	Normal	56.3	<0.001	<0.001	<0.001	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA158_201103	03 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2040589	Normal	40.5	<0.001	<0.001	<0.001	<0.001	0.005	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA156_201103	03 Nov 2020	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2040589	Normal	31.5	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA157_201103	03 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2040589	Normal	38.8	<0.001	<0.001	<0.001	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA165_201103	03 Nov 2020	Fish	Trevally (Caranx sp.)	ES2040589	Normal	120	<0.001	<0.001	<0.001	<0.001	0.003	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA161_201103	03 Nov 2020	Fish	Flathead (Platycephalidae (family))	ES2040589	Normal	54.2	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA164_201103	03 Nov 2020	Fish	Trevally (Caranx sp.)	ES2040589	Normal	100	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA168_201103	03 Nov 2020	Fish	Ponyfish (Leiognathus equulus)	ES2040589	Normal	34.2	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA171_201103	03 Nov 2020	Fish	Sea Mullet (Mugil cephalus)	ES2040589	Normal	100	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA206_211108	08 Nov 2021	Invertebrate	Long Bum (Telescopium telescopium)	ES2203382	Normal	57.8	<0.001	<0.001	<0.001	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA238_211124	24 Nov 2021	Fish	Barramundi (Lates calcarifer)	ES2203382	Normal	104	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA239_211124	24 Nov 2021	Fish	Barramundi (Lates calcarifer)	ES2203382	Normal	62.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA241_211124	24 Nov 2021	Fish	Brown Sweetlips (Plectorhinchus gibbosus)	ES2203382	Normal	18.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA245_211124	24 Nov 2021	Fish	King Salmon (Polydactylus macrochir)	ES2203382	Normal	85.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA246_211124	24 Nov 2021	Fish	King Salmon (Polydactylus macrochir)	ES2203382	Normal	96.8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA256_211124	24 Nov 2021	Fish	Barred Javelin (Pomadasys kaakan)	ES2203382	Normal	81.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA247_211124	24 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2203382	Normal	47.0	<0.001	<0.001	0.009	<0.001	0.039	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA249_211124	24 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2203382	Normal	68.0	<0.001	<0.001	<0.001	<0.001	0.031	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA253_211124	24 Nov 2021	Fish	Scat (Scatophagus sp.)	ES2203382	Normal	119	<0.001	<0.001	<0.001	<0.001	0.009	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA240_211124	24 Nov 2021	Fish	Barramundi (Lates calcarifer)	ES2203382	Normal	80.4	<0.001	<0.001	0.003	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA248_211124	24 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2203382	Normal	64.7	<0.001	<0.001	0.005	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA237_211124	24 Nov 2021	Fish	Barramundi (Lates calcarifer)	ES2203382	Normal	141	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA242_211124	24 Nov 2021	Fish	Brown Sweetlips (Plectorhinchus gibbosus)	ES2203382	Normal	96.5	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA244_211124	24 Nov 2021	Fish	King Salmon (Polydactylus macrochir)	ES2203382	Normal	98.8	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA252_211124	24 Nov 2021	Fish	Archerfish (Toxotes chatareus)	ES2203382	Normal	51.9	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA254_211124	24 Nov 2021	Fish	Scat (Scatophagus sp.)	ES2203382	Normal	51.6	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA243_211124	24 Nov 2021	Fish	Brown Sweetlips (Plectorhinchus gibbosus)	ES2203382	Normal	79.6	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA250_211124	24 Nov 2021	Fish	Archerfish (Toxotes chatareus)	ES2203382	Normal	46.7	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA251_211124	24 Nov 2021	Fish	Archerfish (Toxotes chatareus)	ES2203382	Normal	29.9	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA255_211124	24 Nov 2021	Fish	Scat (Scatophagus sp.)	ES2203382	Normal	41.4	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA257_211124	24 Nov 2021	Fish	Bull Shark (Carcharhinus leucas)	ES2203382	Normal	68.0	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA258_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Normal	116	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA259_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Normal	95.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA260_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Normal	109	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA261_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Normal

								PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids										
							Weight of Sample Prepared	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	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)
							g	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							0.1	0.0005	0.0005	0.0003	0.0005	0.0003	0.0003	0.001	0.0005	0.0005	0.0005	0.0001	0.0001	0.0005	0.0005	0.0005	0.0005	0.0005
ESANZ 2017 2-6 years Curstaceans (invertebrate)										0.065		0.062						10						
FSANZ 2017 2-6 years Finfish (fish)										0.0052		0.0052												
Location Code	Field ID	Date	Fauna Group	Species	Lab Report Number	Sample Type																		
	1302_BIOAFA265_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Normal	57.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA266_221025	25 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2240147	Normal	41.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA267_221025	25 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2240147	Normal	43.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA272_221025	25 Oct 2022	Fish	Australian Giant Herring (Elops machnata)	ES2240147	Normal	90.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA279_221025	25 Oct 2022	Fish	Scat (Scatophagus sp.)	ES2240147	Normal	52.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA280_221025	25 Oct 2022	Fish	Scat (Scatophagus sp.)	ES2240147	Normal	40.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA281_221025	25 Oct 2022	Fish	Scat (Scatophagus sp.)	ES2240147	Normal	33.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA282_221025	25 Oct 2022	Fish	Brown Sweetlips (Plectorhinchus gibbosus)	ES2240147	Normal	35.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA283_221025	25 Oct 2022	Fish	Pikey Bream (Acanthopagrus pacificus)	ES2240147	Normal	31.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC140_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Field_D	119	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC141_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Field_D	110	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC142_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Field_D	111	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC143_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	ES2240147	Field_D	98.9	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA273_221025	25 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	ES2240147	Normal	70.3	<0.001	<0.001	<0.001	<0.001	0.047	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA278_221025	25 Oct 2022	Crustacean	Sand Crab (Portunus pelagicus)	ES2240147	Normal	36.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA274_221025	25 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	ES2240147	Normal	50.5	<0.001	<0.001	<0.001	<0.001	0.008	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA269_221025	25 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2240147	Normal	74.9	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA270_221025	25 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2240147	Normal	65.0	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA271_221025	25 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	ES2240147	Normal	64.9	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA275_221025	25 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	ES2240147	Normal	40.6	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA268_221025	25 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2240147	Normal	45.2	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA276_221025	25 Oct 2022	Crustacean	Sand Crab (Portunus pelagicus)	ES2240147	Normal	20.9	<0.001	<0.001	0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA277_221025	25 Oct 2022	Crustacean	Sand Crab (Portunus pelagicus)	ES2240147	Normal	21.8	<0.001	<0.001	0.002	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA316_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	ES2337477	Normal	81.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA318_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	ES2337477	Normal	66.3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA319_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	ES2337477	Normal	55.6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA320_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	ES2337477	Normal	58.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA325_231017	17 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	ES2337477	Normal	61.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA326_231017	17 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	ES2337477	Normal	50.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA327_231017	17 Oct 2023	Fish	Northern Whiting (Sillago sihama)	ES2337477	Normal	45.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC151_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	ES2337477	Field_D	65.7	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA322_231017	17 Oct 2023	Fish	Queenfish (Scomberoides commersonnianus)	ES2337477	Normal	46.8	<0.001	<0.001	<0.001	<0.001	0.011	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA323_231017	17 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	ES2337477	Normal	75.1	<0.001	<0.001	<0.001	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA315_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	ES2337477	Normal	162	<0.001	<0.001	<0.001	<0.001	0.003	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC201_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	RN1417767	Interlab_D	-	<0.0005	<0.0005	<0.0003	<0.0005	0.0023	<0.0003	<0.001	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	1302_BIOAFA321_231017	17 Oct 2023	Fish	Queenfish (Scomberoides commersonnianus)	ES2337477	Normal	71.6	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA324_231017	17 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	ES2337477	Normal	96.6	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC148_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	ES2337477	Field_D	71.5	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC149_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	ES2337477	Field_D	59.8	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA317_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	ES2337477	Normal	78.6	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC150_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	ES2337477	Field_D	50.8	<0.001	<0.001	<0.001	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_QC202_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	RN1417767	Interlab_D		<0.0005	<0.0005	<0.0003	<0.0005	0.0009	<0.0003	<0.001	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	1302_BIOAFA328_231017	17 Oct 2023	Crustacean	Sand Crab (Portunus pelagicus)	ES2337477	Normal	35.0	<0.001	<0.001	0.002	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA329_231017	17 Oct 2023	Crustacean	Sand Crab (Portunus pelagicus)	ES2337477	Normal	43.2	<0.001	<0.001	0.003	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA330_231017	17 Oct 2023	Crustacean	Sand Crab (Portunus pelagicus)	ES2337477	Normal	46.4	<0.001	<0.001	0.003	<0.001	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
BIO019	1302_BIOAFA207_211108	08 Nov 2021	Invertebrate	Long Bum (Telescopium telescopium)	ES2203382	Normal	53.4	<0.001	<0.001	<0.001	<0.001	0.012	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
BIO020	1302_BIOAFA208_211108	08 Nov 2021	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	ES2203382	Normal	48.0	<0.001	<0.001	<0.001	<0.001	0.007	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
BIO024	1302_BIOAFA148_191115	15 Nov 2019	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES1938881	Normal	8.5	<0.001	<0.001	0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA201_201112	12 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2040589	Normal	35.4	<0.001	<0.001	0.002	<0.001	0.004	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA202_201112	12 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2040589	Normal	26.4	0.001	<0.001	0.002	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA215_211112	12 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	11.7	<0.001	<0.001	0.015	<0.001	0.043	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	0.002
	1302_BIOAFA216_211112	12 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	23.6	<0.001	0.001	0.008	<0.001	0.03	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA217_211112	12 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	29.8	<0.001	<0.001	0.005	<0.001	0.011	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA312_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	11.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA313_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	11.4	<0.001	<0.001	0.005	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA314_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	7.5	<0.001	<0.001	<0.001	<0.001	0.002	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA361_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	21.3	<0.001	<0.001	0.015	0.001	0.059	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA360_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	22.5	<0.001	<0.001	0.011	<0.001	0.024	<0.002	<0.005	<0.002	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA362_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	23.1	<0.001	<0.001	0.005	<0.001	0.015	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	0.004
BIO026	1302_BIOAFA199_201108	08 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2040589	Normal	13.4	<0.001	0.002	0.008	<0.001	0.004	<0.002	<0.005	<0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA213_211114	14 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	33.0	<0.001	0.001	0.01	<0.001	0.022	<0.002	<0.005	<0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA214_211114	14 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	49.3	<0.001	<0.001	0.008	<0.001	0.022	<0.002	<0.005	<0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA212_211114	14 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	33.2	<0.001	0.002	0.013	0.001	0.021	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA311_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	1.6	<0.001	<0.001	0.012	<0.001	0.038	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA309_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	3.2	<0.001	<0.001	0.007	<0.001	0.026	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA359_231025	25 Oct 2023	Crustacean	Cherabin (Macrobrachium spinipes)	ES2337477	Normal	28.8	<0.001	<0.001	0.05	0.008	0.37	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA357_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	32.7	<0.001	<0.001	0.008	<0.001	0.043	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA356_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	26.9	<0.001	<0.001	0.012	<0.001	0.041	<0.002	<0.005	<0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA358_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	20.2	<0.001	<0.001	0.007	<0.001	0.02	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
BIO028	1302_BIOAFA146_191115	15 Nov 2019	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES1938881	Normal	26.6	0.003	0.002	0.01	<0.001	0.016	<0.002	<0.005	<0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA145_191115	15 Nov 2019	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES1938881	Normal	31.5	0.003	0.001	0.007	<0.001	0.011	<0.002	<0.005	<0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA147_191115	15 Nov 2019	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES1938881	Normal	21.3	<0.001	<0.001	0.005	<0.001	0.005	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA196_201107	07 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2040589	Normal	39.8	<0.001	0.001	0.008	<0.001	0.015	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA197_201107	07 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2040589	Normal	54.9	<0.001	<0.001	0.006	<0.001	0.006	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA210_211113	13 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	76.5	<0.001	0.001	0.018	<0.001	0.047	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	0.002	0.003	
	1302_BIOAFA211_211113	13 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	70.0	0.002	0.002	0.021	<0.001	0.047	<0.002	<0.005	<0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA209_211113	13 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2203382	Normal	49.1	0.002	0.002	0.016	<0.001	0.022	<0.002	<0.005	<0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA307_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	15.8	<0.001	0.001	0.024	0.002	0.115	<0.002	<0.005	<0.002	0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA310_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	2.6	<0.001	<0.001	0.012	<0.001	0.066	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA306_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	15.2	<0.001	0.001	0.018	0.001	0.031	<0.002	<0.005	<0.002	0.002	<0.001	0.002	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA308_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2240147	Normal	6.7	<0.001	<0.001	0.009	<0.001	0.01	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA353_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	24.8	<0.001	0.001	0.02	<0.001	0.058	<0.002	<0.005	<0.002	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA355_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	15.4	<0.001	<0.001	0.016	0.001	0.042	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002
	1302_BIOAFA354_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	ES2337477	Normal	18.3	<0.001	<0.001	0.008	<0.001	0.023	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002

					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					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	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.002	0.001	0.001
ESANZ 2017 2-6 years Curstaceans (invertebrate)																0.065	
FSANZ 2017 2-6 years Finfish (fish)																0.0052	
Location Code	**Field ID**	**Date**	**Fauna Group**	**Species**													
BIO007	1302_BIOAFA123_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.024	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.018	0.042
	1302_BIOAFA120_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.03	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.015	0.045
	1302_BIOAFA122_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.028	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.015	0.043
	1302_BIOAFA129_191113	13 Nov 2019	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.014	0.014
	1302_BIOAFA121_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.029	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.012	0.041
	1302_BIOAFA124_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.025	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.011	0.036
	1302_BIOAFA138_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.012	0.012
	1302_BIOAFA127_191113	13 Nov 2019	Fish	Tarpon (Megalops cyprinoides)	<0.002	0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.01	0.012
	1302_BIOAFA131_191113	13 Nov 2019	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.006	0.006
	1302_BIOAFA136_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.009	0.009
	1302_BIOAFA130_191113	13 Nov 2019	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA126_191113	13 Nov 2019	Fish	Tarpon (Megalops cyprinoides)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA128_191113	13 Nov 2019	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA137_191113	13 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.005
	1302_BIOAFA125_191113	13 Nov 2019	Fish	Tarpon (Megalops cyprinoides)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA179_201104	04 Nov 2020	Fish	Tarpon (Megalops cyprinoides)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA186_201104	04 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA187_201104	04 Nov 2020	Fish	Milkfish (Chanos chanos)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA193_201104	04 Nov 2020	Fish	Trevally (Caranx sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA194_201104	04 Nov 2020	Fish	Ponyfish (Leiognathus equulus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA190_201104	04 Nov 2020	Fish	Milkfish (Chanos chanos)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.019	0.019
	1302_BIOAFA189_201104	04 Nov 2020	Fish	Milkfish (Chanos chanos)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.015	0.015
	1302_BIOAFA183_201104	04 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.009	0.009
	1302_BIOAFA195_201104	04 Nov 2020	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.008	0.008
	1302_BIOAFA181_201104	04 Nov 2020	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.009	0.009
	1302_BIOAFA191_201104	04 Nov 2020	Fish	Trevally (Caranx sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.007	0.007
	1302_BIOAFA184_201104	04 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.005	0.005
	1302_BIOAFA192_201104	04 Nov 2020	Fish	Trevally (Caranx sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA182_201104	04 Nov 2020	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.003
	1302_BIOAFA180_201104	04 Nov 2020	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA178_201104	04 Nov 2020	Fish	Blue Salmon (Eleutheronema tetradactylum)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA220_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA221_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA225_211125	25 Nov 2021	Fish	Sicklefish (Drepane punctata)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA227_211125	25 Nov 2021	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.009	0.009
	1302_BIOAFA228_211125	25 Nov 2021	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.008	0.008
	1302_BIOAFA226_211125	25 Nov 2021	Fish	Ponyfish (Leiognathus equulus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.005	0.005
	1302_BIOAFA229_211125	25 Nov 2021	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA219_211125	25 Nov 2021	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA223_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.003
	1302_BIOAFA224_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA218_211125	25 Nov 2021	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA222_211125	25 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA234_211203	03 Dec 2021	Fish	Northern Whiting (Sillago sihama)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA235_211203	03 Dec 2021	Fish	Northern Whiting (Sillago sihama)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA236_211203	03 Dec 2021	Fish	Northern Whiting (Sillago sihama)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA231_211203	03 Dec 2021	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA230_211203	03 Dec 2021	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA232_211203	03 Dec 2021	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA233_211203	03 Dec 2021	Fish	Garfish (Hemiramphidae (family))	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA290_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA295_221026	26 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA299_221026	26 Oct 2022	Fish	Banded Archerfish (Toxotes jaculatrix)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA301_221026	26 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_QC145_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA305_221026	26 Oct 2022	Crustacean	Orange Mud Crab (Scylla olivacea)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA297_221026	26 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.036	0.036
	1302_BIOAFA296_221026	26 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.03	0.03
	1302_BIOAFA302_221026	26 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.009	0.009
	1302_QC146_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.008	0.008
	1302_BIOAFA292_221026	26 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.011	0.011
	1302_BIOAFA291_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA294_221026	26 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.005	0.005
	1302_BIOAFA289_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA293_221026	26 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA298_221026	26 Oct 2022	Fish	Banded Archerfish (Toxotes jaculatrix)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA303_221026	26 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA304_221026	26 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_QC144_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_QC147_221026	26 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA300_221026	26 Oct 2022	Fish	Sicklefish (Drepane punctata)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA345_231018	18 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA346_231018	18 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA347_231018	18 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA337_231018	18 Oct 2023	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.084	0.084
	1302_BIOAFA336_231018	18 Oct 2023	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.046	0.046
	1302_BIOAFA335_231018	18 Oct 2023	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.025	0.025
	1302_BIOAFA334_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.02	0.02
	1302_QC155_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.02	0.02
	1302_BIOAFA333_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.015	0.015
	1302_BIOAFA338_231018	18 Oct 2023	Fish	Banded Archerfish (Toxotes jaculatrix)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.013	0.013
	1302_BIOAFA344_231018	18 Oct 2023	Fish	Tarpon (Megalops cyprinoides)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.015	0.015
	1302_QC154_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.014	0.014
	1302_BIOAFA339_231018	18 Oct 2023	Fish	Milkfish (Chanos chanos)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.007	0.007
	1302_BIOAFA332_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.007	0.007
	1302_QC204_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.005	0.0068	-
	1302_BIOAFA341_231018	18 Oct 2023	Fish	Milkfish (Chanos chanos)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.005	0.005

					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					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	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.002	0.001	0.001
ESANZ 2017 2-6 years Curstaceans (invertebrate)																0.065	
FSANZ 2017 2-6 years Finfish (fish)																0.0052	
Location Code	**Field ID**	**Date**	**Fauna Group**	**Species**													
	1302_QC152_231018	18 Oct 2023	Fish	Mangrove Jack (Lutjanus argentimaculatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.005	0.005
	1302_QC153_231018	18 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.005	0.005
	1302_QC203_231018	18 Oct 2023	Fish	Mangrove Jack (Lutjanus argentimaculatus)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.005	0.0041	-
	1302_BIOAFA340_231018	18 Oct 2023	Fish	Milkfish (Chanos chanos)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA331_231018	18 Oct 2023	Fish	Mangrove Jack (Lutjanus argentimaculatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.003
	1302_BIOAFA342_231018	18 Oct 2023	Fish	Tarpon (Megalops cyprinoides)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA343_231018	18 Oct 2023	Fish	Tarpon (Megalops cyprinoides)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
BIO016	1302_BIOAFA149_191115	15 Nov 2019	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.01	0.013
	1302_BIOAFA150_191115	15 Nov 2019	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.011	0.014
	1302_BIOAFA151_191115	15 Nov 2019	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.027	0.031
	1302_BIOAFA152_191115	15 Nov 2019	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.01	0.01
	1302_BIOAFA153_191115	15 Nov 2019	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.009	0.009
	1302_BIOAFA173_201103	03 Nov 2020	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.029	0.036
	1302_BIOAFA174_201103	03 Nov 2020	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.032	0.04
	1302_BIOAFA175_201103	03 Nov 2020	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.015	0.021
	1302_BIOAFA176_201103	03 Nov 2020	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.006	0.006
	1302_BIOAFA177_201103	03 Nov 2020	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.006	0.006
	1302_BIOAFA204_211108	08 Nov 2021	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.007	0.011
	1302_BIOAFA284_221029	29 Oct 2022	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.007	0.008
	1302_BIOAFA285_221029	29 Oct 2022	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.006	0.007
	1302_BIOAFA286_221029	29 Oct 2022	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.018	0.021
	1302_BIOAFA287_221029	29 Oct 2022	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.016	0.016
	1302_BIOAFA288_221029	29 Oct 2022	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA348_231017	17 Oct 2023	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.008	0.008
	1302_BIOAFA349_231017	17 Oct 2023	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.012	0.012
	1302_BIOAFA350_231017	17 Oct 2023	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.017	0.026
	1302_BIOAFA351_231017	17 Oct 2023	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.016	0.02
	1302_BIOAFA352_231017	17 Oct 2023	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	0.005	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.018	0.03
BIO017	1302_BIOAFA205_211108	08 Nov 2021	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.008	0.011
BIO018	1302_BIOAFA101_191112	12 Nov 2019	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA112_191112	12 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.043	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.069	0.112
	1302_BIOAFA107_191112	12 Nov 2019	Fish	Eel-tailed Catfish (Plotosus canius)	<0.002	0.083	0.005	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.048	0.137
	1302_BIOAFA108_191112	12 Nov 2019	Fish	Ponyfish (Leiognathus equulus)	<0.002	0.087	0.004	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.045	0.137
	1302_BIOAFA105_191112	12 Nov 2019	Fish	Blue Salmon (Eleutheronema tetradactylum)	<0.002	0.062	0.003	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.03	0.095
	1302_BIOAFA113_191112	12 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.048	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.029	0.077
	1302_BIOAFA106_191112	12 Nov 2019	Fish	Blue Salmon (Eleutheronema tetradactylum)	<0.002	0.051	0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.024	0.077
	1302_BIOAFA104_191112	12 Nov 2019	Fish	Blue Salmon (Eleutheronema tetradactylum)	<0.002	0.049	0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.02	0.071
	1302_BIOAFA111_191112	12 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.043	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.019	0.062
	1302_BIOAFA114_191112	12 Nov 2019	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	0.033	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.014	0.047
	1302_BIOAFA100_191112	12 Nov 2019	Fish	Queenfish (Scomberoides commersonnianus)	<0.002	0.004	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.006	0.01
	1302_BIOAFA102_191112	12 Nov 2019	Fish	Barramundi (Lates calcarifer)	<0.002	0.003	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.005
	1302_BIOAFA103_191112	12 Nov 2019	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA109_191112	12 Nov 2019	Crustacean	Sand Crab (Portunus pelagicus)	<0.002	0.072	0.004	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.036	0.114
	1302_BIOAFA110_191112	12 Nov 2019	Crustacean	Sand Crab (Portunus pelagicus)	<0.002	0.051	0.003	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.031	0.085
	1302_BIOAFA154_201103	03 Nov 2020	Fish	Pikey Bream (Acanthopagrus pacificus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA155_201103	03 Nov 2020	Fish	Blue Salmon (Eleutheronema tetradactylum)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA159_201103	03 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA160_201103	03 Nov 2020	Fish	Hawaiian Giant Herring (Elops hawaiensis)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA162_201103	03 Nov 2020	Fish	Archerfish (Toxotes chatareus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA166_201103	03 Nov 2020	Fish	Trevally (Caranx sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA170_201103	03 Nov 2020	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA172_201103	03 Nov 2020	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA167_201103	03 Nov 2020	Fish	Ponyfish (Leiognathus equulus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.008	0.008
	1302_BIOAFA158_201103	03 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.005	0.005
	1302_BIOAFA156_201103	03 Nov 2020	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA157_201103	03 Nov 2020	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
	1302_BIOAFA165_201103	03 Nov 2020	Fish	Trevally (Caranx sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.003
	1302_BIOAFA161_201103	03 Nov 2020	Fish	Flathead (Platycephalidae (family))	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA164_201103	03 Nov 2020	Fish	Trevally (Caranx sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA168_201103	03 Nov 2020	Fish	Ponyfish (Leiognathus equulus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA171_201103	03 Nov 2020	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA206_211108	08 Nov 2021	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.008	0.011
	1302_BIOAFA238_211124	24 Nov 2021	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA239_211124	24 Nov 2021	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA241_211124	24 Nov 2021	Fish	Brown Sweetlips (Plectorhinchus gibbosus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA245_211124	24 Nov 2021	Fish	King Salmon (Polydactylus macrochir)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA246_211124	24 Nov 2021	Fish	King Salmon (Polydactylus macrochir)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA256_211124	24 Nov 2021	Fish	Barred Javelin (Pomadasys kaakan)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA247_211124	24 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.048	0.048
	1302_BIOAFA249_211124	24 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.031	0.031
	1302_BIOAFA253_211124	24 Nov 2021	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.009	0.009
	1302_BIOAFA240_211124	24 Nov 2021	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.01	0.01
	1302_BIOAFA248_211124	24 Nov 2021	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.009	0.009
	1302_BIOAFA237_211124	24 Nov 2021	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA242_211124	24 Nov 2021	Fish	Brown Sweetlips (Plectorhinchus gibbosus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA244_211124	24 Nov 2021	Fish	King Salmon (Polydactylus macrochir)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA252_211124	24 Nov 2021	Fish	Archerfish (Toxotes chatareus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA254_211124	24 Nov 2021	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA243_211124	24 Nov 2021	Fish	Brown Sweetlips (Plectorhinchus gibbosus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA250_211124	24 Nov 2021	Fish	Archerfish (Toxotes chatareus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA251_211124	24 Nov 2021	Fish	Archerfish (Toxotes chatareus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA255_211124	24 Nov 2021	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA257_211124	24 Nov 2021	Fish	Bull Shark (Carcharhinus leucas)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA258_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA259_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA260_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA261_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA262_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA263_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA264_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001

					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					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
					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	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.002	0.001	0.001
ESANZ 2017 2-6 years Curstaceans (invertebrate)																0.065	
FSANZ 2017 2-6 years Finfish (fish)																0.0052	
Location Code	**Field ID**	**Date**	**Fauna Group**	**Species**													
	1302_BIOAFA265_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA266_221025	25 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA267_221025	25 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA272_221025	25 Oct 2022	Fish	Australian Giant Herring (Elops machnata)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA279_221025	25 Oct 2022	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA280_221025	25 Oct 2022	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA281_221025	25 Oct 2022	Fish	Scat (Scatophagus sp.)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA282_221025	25 Oct 2022	Fish	Brown Sweetlips (Plectorhinchus gibbosus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA283_221025	25 Oct 2022	Fish	Pikey Bream (Acanthopagrus pacificus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_QC140_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_QC141_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_QC142_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_QC143_221025	25 Oct 2022	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA273_221025	25 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.047	0.047
	1302_BIOAFA278_221025	25 Oct 2022	Crustacean	Sand Crab (Portunus pelagicus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA274_221025	25 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.008	0.008
	1302_BIOAFA269_221025	25 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA270_221025	25 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA271_221025	25 Oct 2022	Fish	Forktail Catfish 2 (Neoarius sp.2)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA275_221025	25 Oct 2022	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA268_221025	25 Oct 2022	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_BIOAFA276_221025	25 Oct 2022	Crustacean	Sand Crab (Portunus pelagicus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.004
	1302_BIOAFA277_221025	25 Oct 2022	Crustacean	Sand Crab (Portunus pelagicus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.003
	1302_BIOAFA316_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA318_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA319_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA320_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA325_231017	17 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA326_231017	17 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA327_231017	17 Oct 2023	Fish	Northern Whiting (Sillago sihama)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_QC151_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA322_231017	17 Oct 2023	Fish	Queenfish (Scomberoides commersonnianus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.011	0.011
	1302_BIOAFA323_231017	17 Oct 2023	Fish	Forktail Catfish 1 (Neoarius sp.1)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.007	0.007
	1302_BIOAFA315_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.003
	1302_QC201_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.005	0.0023	-
	1302_BIOAFA321_231017	17 Oct 2023	Fish	Queenfish (Scomberoides commersonnianus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA324_231017	17 Oct 2023	Fish	Sea Mullet (Mugil cephalus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.004
	1302_QC148_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_QC149_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA317_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_QC150_231017	17 Oct 2023	Fish	Barramundi (Lates calcarifer)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.001	0.001
	1302_QC202_231017	17 Oct 2023	Fish	King Salmon (Polydactylus macrochir)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.005	0.0009	-
	1302_BIOAFA328_231017	17 Oct 2023	Crustacean	Sand Crab (Portunus pelagicus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.005
	1302_BIOAFA329_231017	17 Oct 2023	Crustacean	Sand Crab (Portunus pelagicus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.005	0.005
	1302_BIOAFA330_231017	17 Oct 2023	Crustacean	Sand Crab (Portunus pelagicus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.004
BIO019	1302_BIOAFA207_211108	08 Nov 2021	Invertebrate	Long Bum (Telescopium telescopium)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.012	0.012
BIO020	1302_BIOAFA208_211108	08 Nov 2021	Invertebrate	Giant Mangrove Whelk (Terebralia palustris)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.007	0.007
BIO024	1302_BIOAFA148_191115	15 Nov 2019	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.003	0.003
	1302_BIOAFA201_201112	12 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.006	0.006
	1302_BIOAFA202_201112	12 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	0.005
	1302_BIOAFA215_211112	12 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.058	0.06
	1302_BIOAFA216_211112	12 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.038	0.04
	1302_BIOAFA217_211112	12 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.016	0.016
	1302_BIOAFA312_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	<0.001
	1302_BIOAFA313_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.011	0.011
	1302_BIOAFA314_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	0.002
	1302_BIOAFA361_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.074	0.075
	1302_BIOAFA360_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.035	0.036
	1302_BIOAFA362_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.02	0.024
BIO026	1302_BIOAFA199_201108	08 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.012	0.016
	1302_BIOAFA213_211114	14 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.032	0.034
	1302_BIOAFA214_211114	14 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.03	0.031
	1302_BIOAFA212_211114	14 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.034	0.037
	1302_BIOAFA311_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.05	0.05
	1302_BIOAFA309_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.033	0.033
	1302_BIOAFA359_231025	25 Oct 2023	Crustacean	Cherabin (Macrobrachium spinipes)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.42	0.428
	1302_BIOAFA357_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.051	0.051
	1302_BIOAFA356_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.053	0.054
	1302_BIOAFA358_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.027	0.027
BIO028	1302_BIOAFA146_191115	15 Nov 2019	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.026	0.032
	1302_BIOAFA145_191115	15 Nov 2019	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.018	0.024
	1302_BIOAFA147_191115	15 Nov 2019	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.01	0.01
	1302_BIOAFA196_201107	07 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.023	0.024
	1302_BIOAFA197_201107	07 Nov 2020	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.012	0.012
	1302_BIOAFA210_211113	13 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.065	0.075
	1302_BIOAFA211_211113	13 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.068	0.074
	1302_BIOAFA209_211113	13 Nov 2021	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.038	0.044
	1302_BIOAFA307_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.139	0.145
	1302_BIOAFA310_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.078	0.078
	1302_BIOAFA306_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.049	0.055
	1302_BIOAFA308_221031	31 Oct 2022	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.019	0.019
	1302_BIOAFA353_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.078	0.08
	1302_BIOAFA355_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.058	0.059
	1302_BIOAFA354_231025	25 Oct 2023	Crustacean	Redclaw Crayfish (Cherux quadricarinatus)	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.031	0.031

APPENDIX D: TEMPORAL GRAPHS

Graph D1 – Groundwater Temporal Trend – PFOA, West

Graph D2 – Groundwater Temporal Trend – PFOS+PFHxS, West

Graph D3 – Groundwater Temporal Trend – PFOA North

Graph D4 – Groundwater Temporal Trend – PFOS+PFHxS North

Graph D5 – Groundwater Temporal Trend – PFOA Central

Graph D6 – Groundwater Temporal Trend – PFOS+PFHxS Central

Graph D7 – Groundwater Temporal Trend – PFOA Southeast

Graph D8 – Groundwater Temporal Trend – PFOS+PFHxS Southeast

Graph D9 – Groundwater Temporal Trend – PFOA South of the base

Graph D10 – Groundwater Temporal Trend – PFOS+PFHxS South of the base

Graph D11 – Surface Water Temporal Trend – PFOA, Rapid Creek (Freshwater)

Graph D12 – Surface Water Temporal Trend – PFOS+PFHxS, Rapid Creek (Freshwater)

Graph D13 – Surface Water Temporal Trend – PFOA, Rapid Creek (Estuarine Water)

Graph D14 – Surface Water Temporal Trend – PFOS+PFHxS, Rapid Creek (Estuarine Water)

Graph D15 – Surface Water Temporal Trend – PFOA, Rapid Creek Catchment (Surface Drains)

Graph D16 – Surface Water Temporal Trend – PFOS+PFHxS, Rapid Creek Catchment (Surface Drains)

Graph D17 – Surface Water Temporal Trend – PFOA, Rapid Creek Catchment (on-base Source Areas)

Graph D18 – Surface Water Temporal Trend – PFOS+PFHxS, Rapid Creek Catchment (on-base Source Areas)

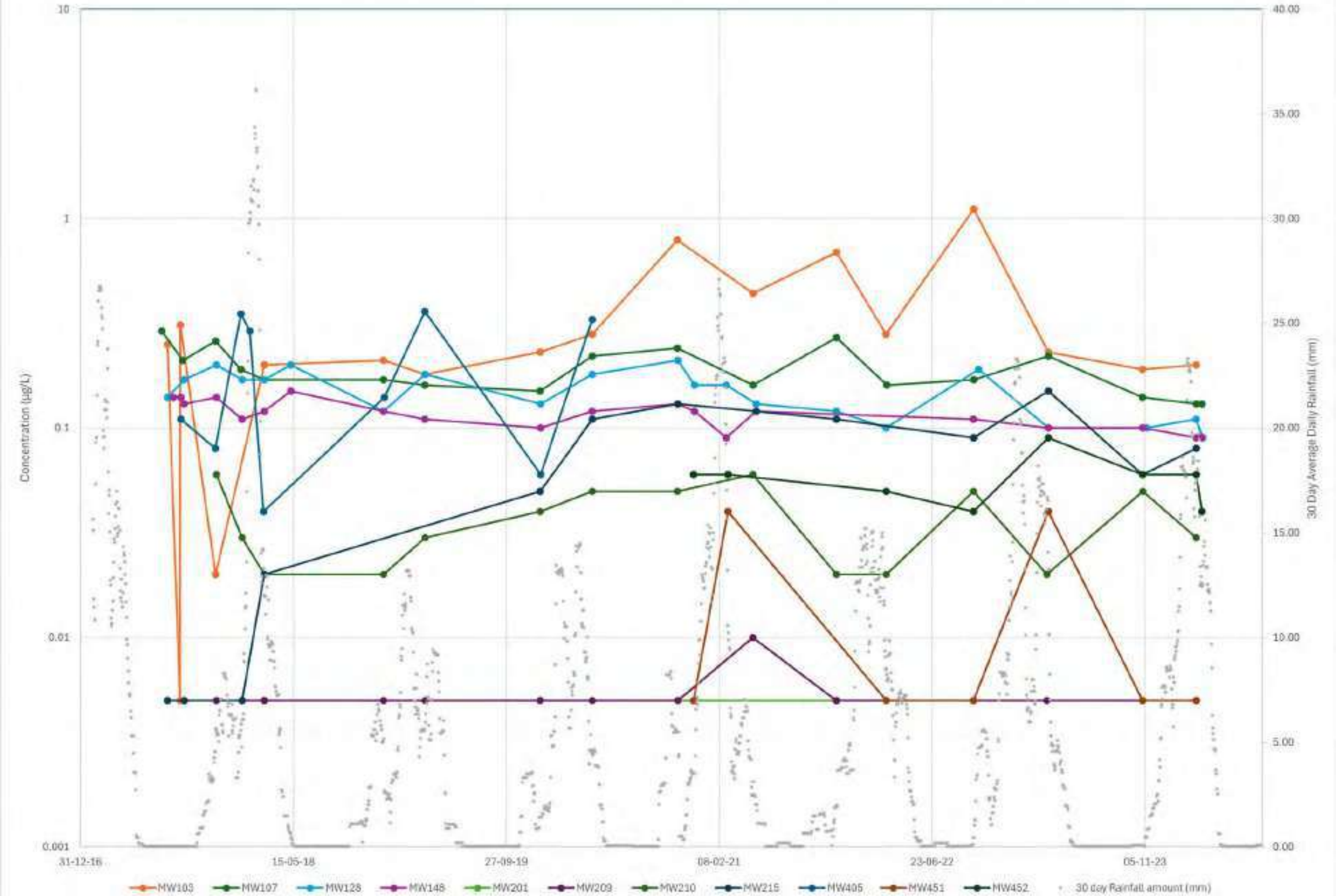
Graph D19 – Surface Water Temporal Trend – PFOA, Ludmilla Creek Catchment

Graph D20 – Surface Water Temporal Trend – PFOS+PFHxS, Ludmilla Creek Catchment

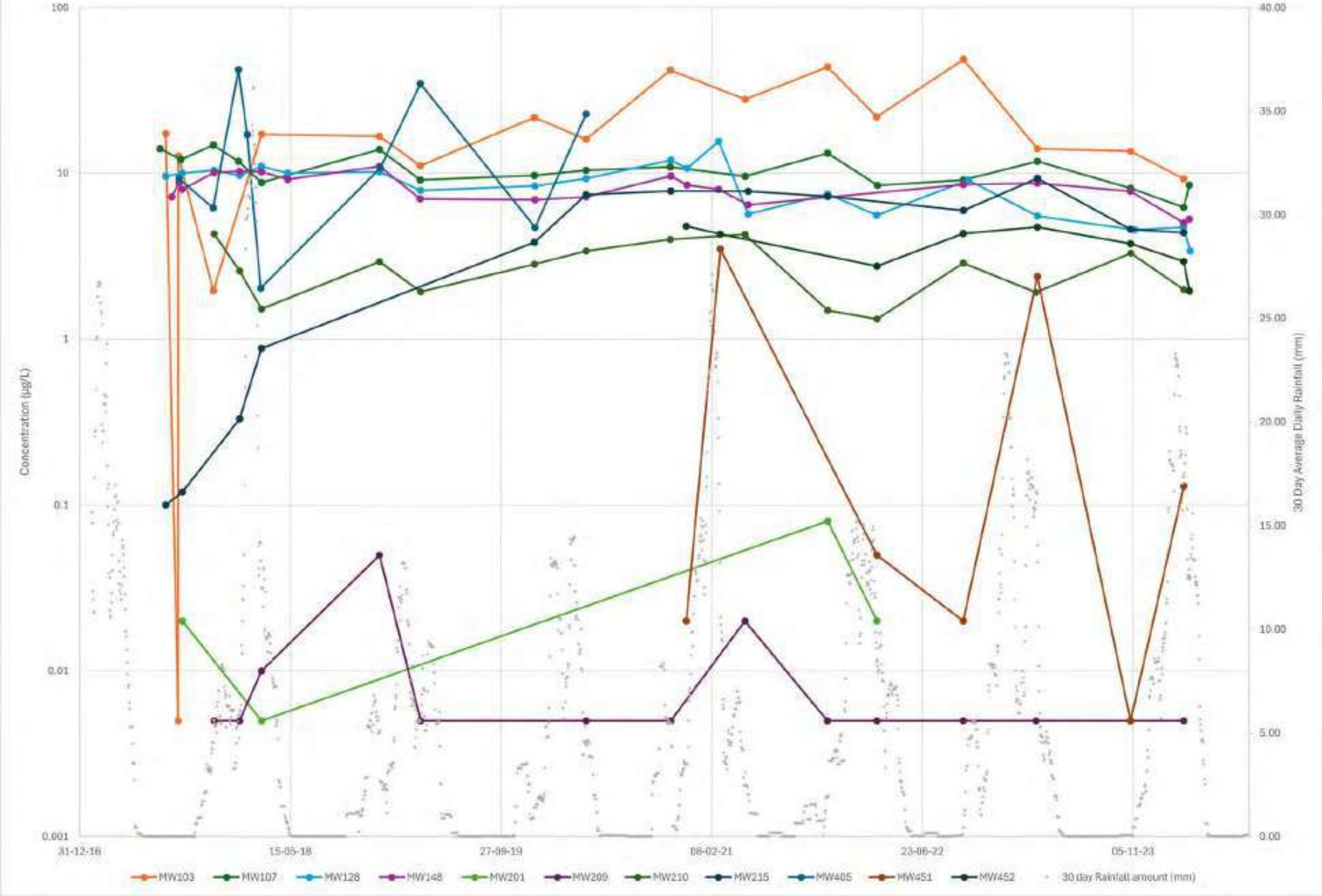
Graph D21 – Surface Water Temporal Trend – PFOA, Reichardt and Sadgroves Creek Catchments

Graph D22 – Surface Water Temporal Trend – PFOS+PFHxS, Reichardt and Sadgroves Creek Catchments

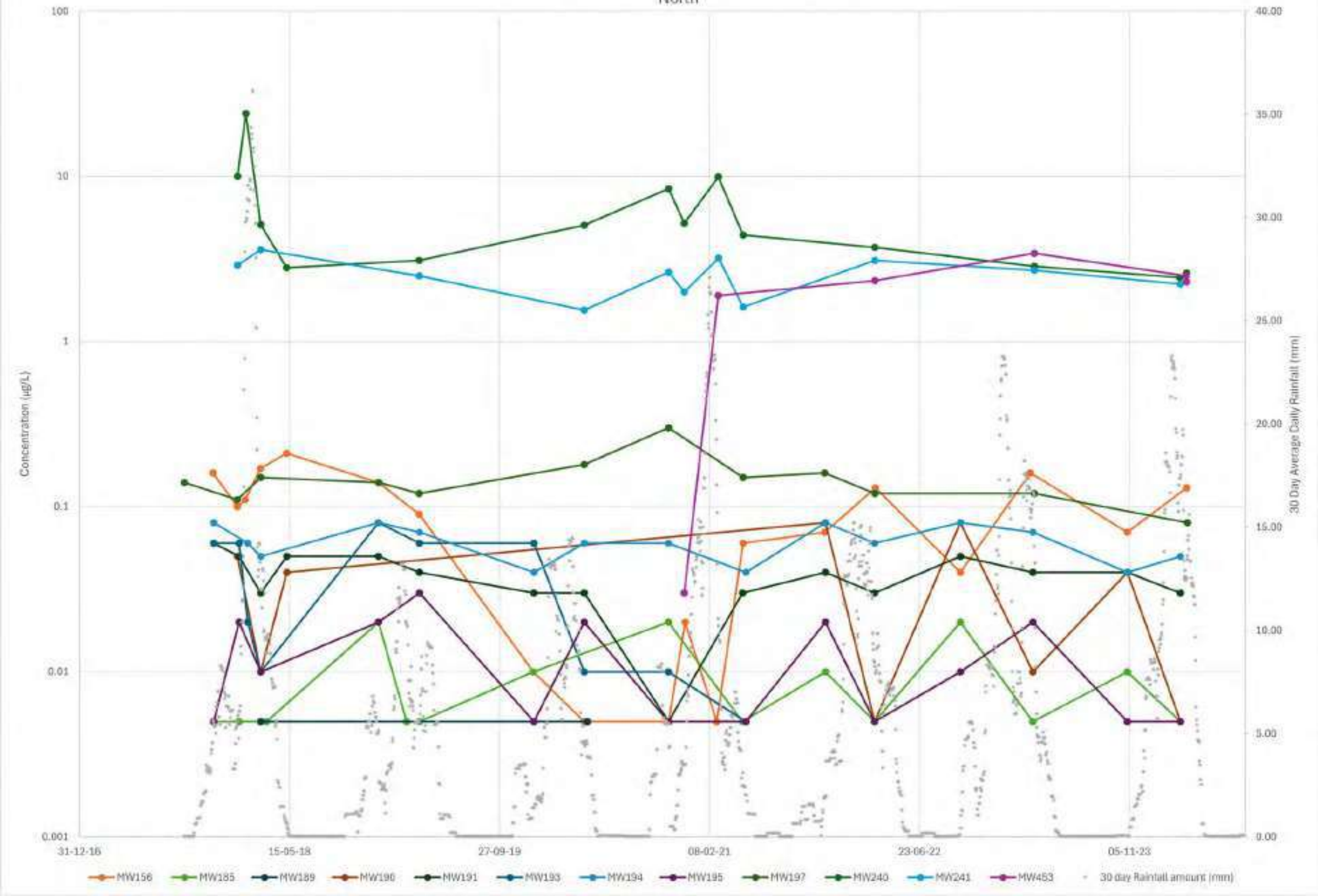
Graph D1 - Groundwater Temporal Trend - PFOA, West



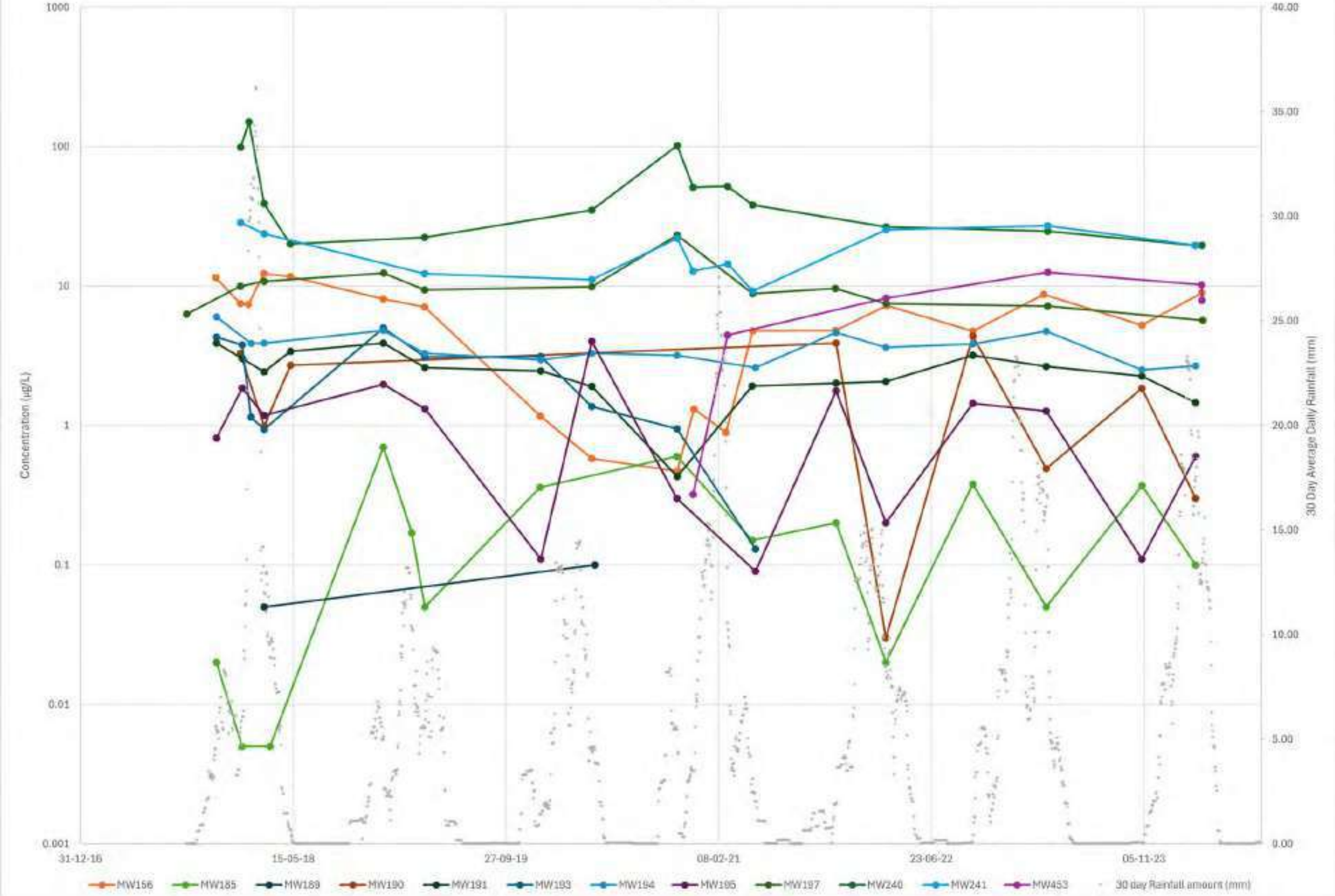
Graph D2 - Groundwater Temporal Trend - PFOS + PFHxS, West



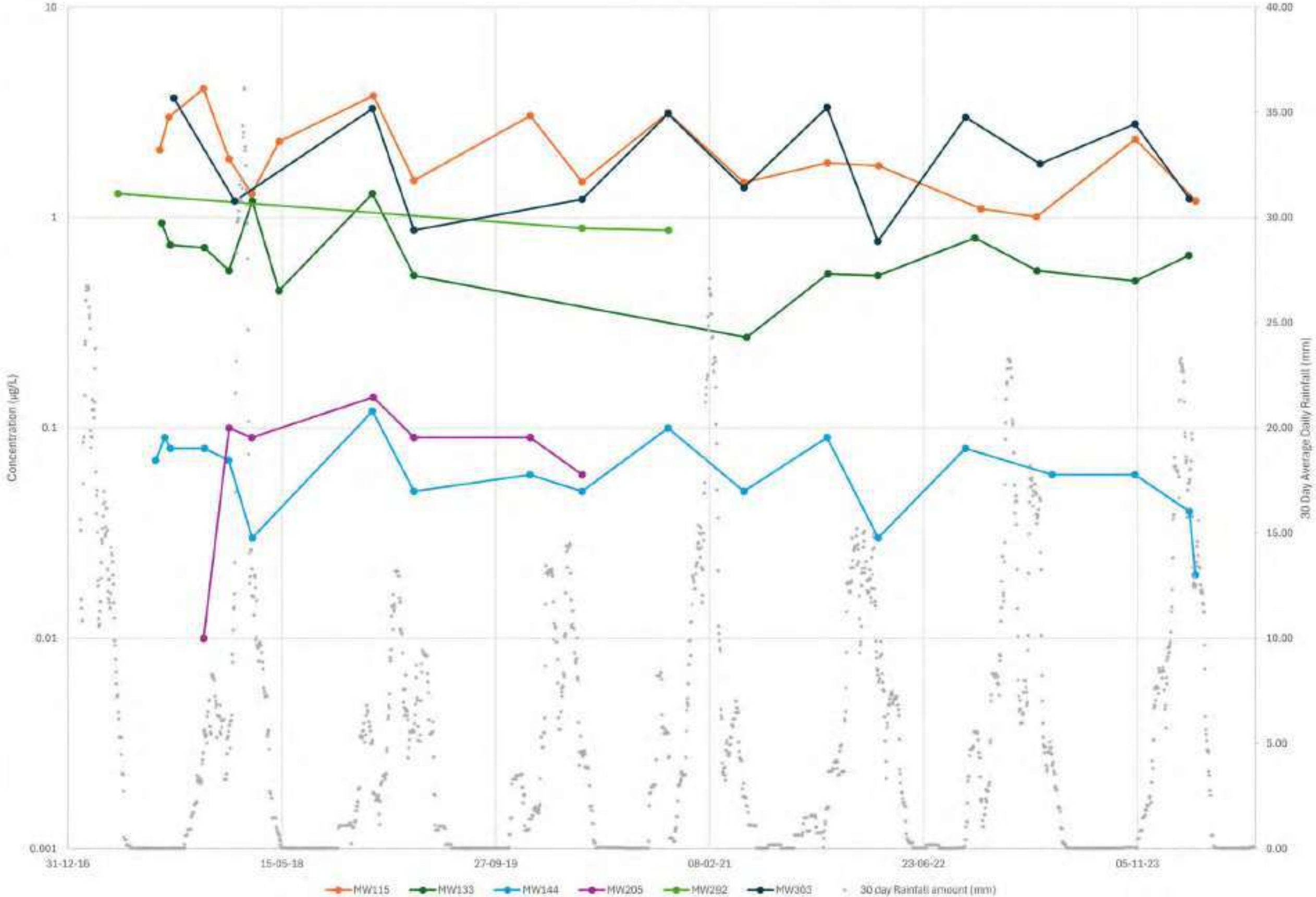
Graph D3 - Groundwater Temporal Trend - PFOA
North



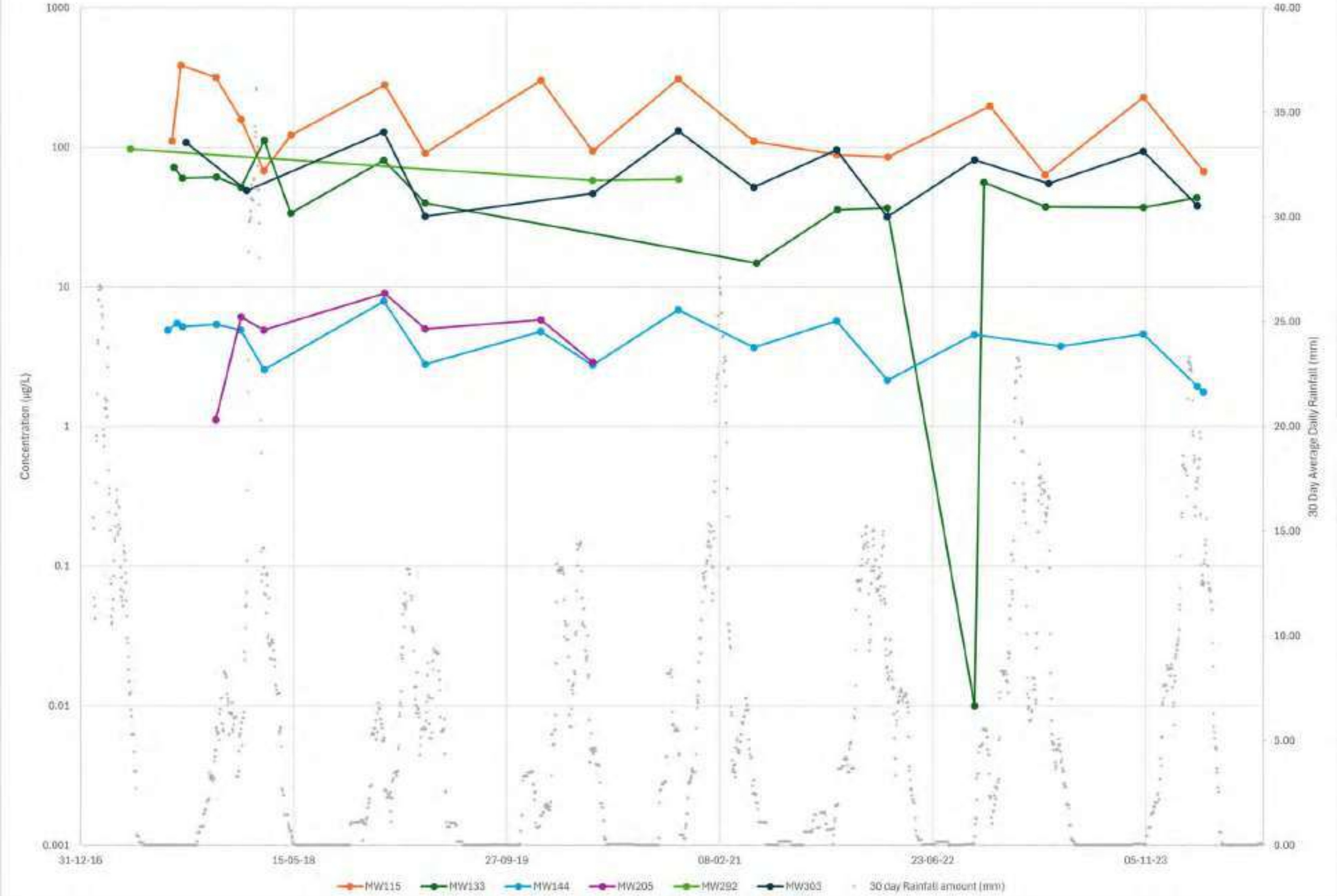
Graph D4 - Groundwater Temporal Trend - PFOS + PFHxS
North



Graph D5 - Groundwater Temporal Trend - PFOA
Central

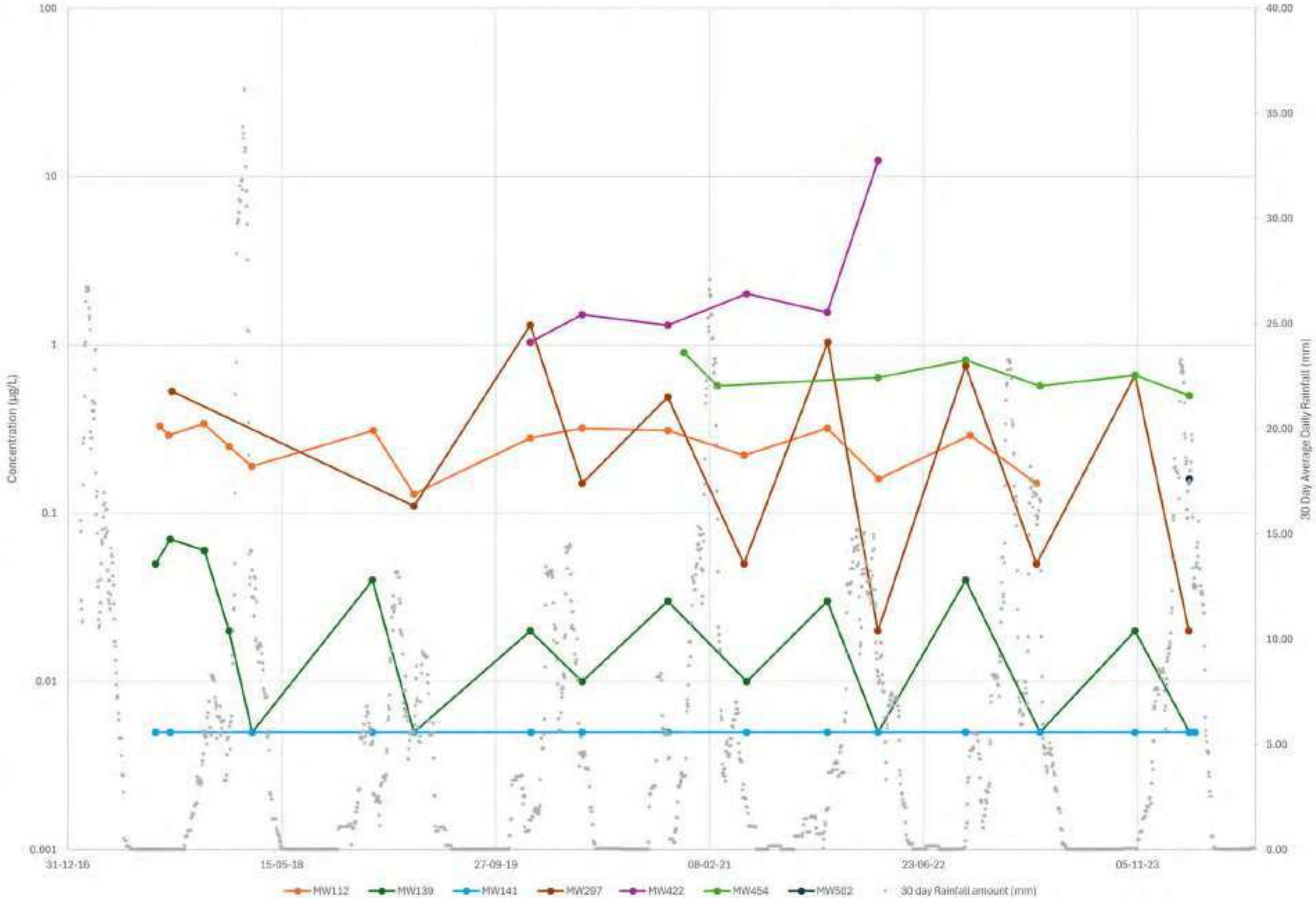


Graph D6 - Groundwater Temporal Trend - PFOS + PFHxS
Central

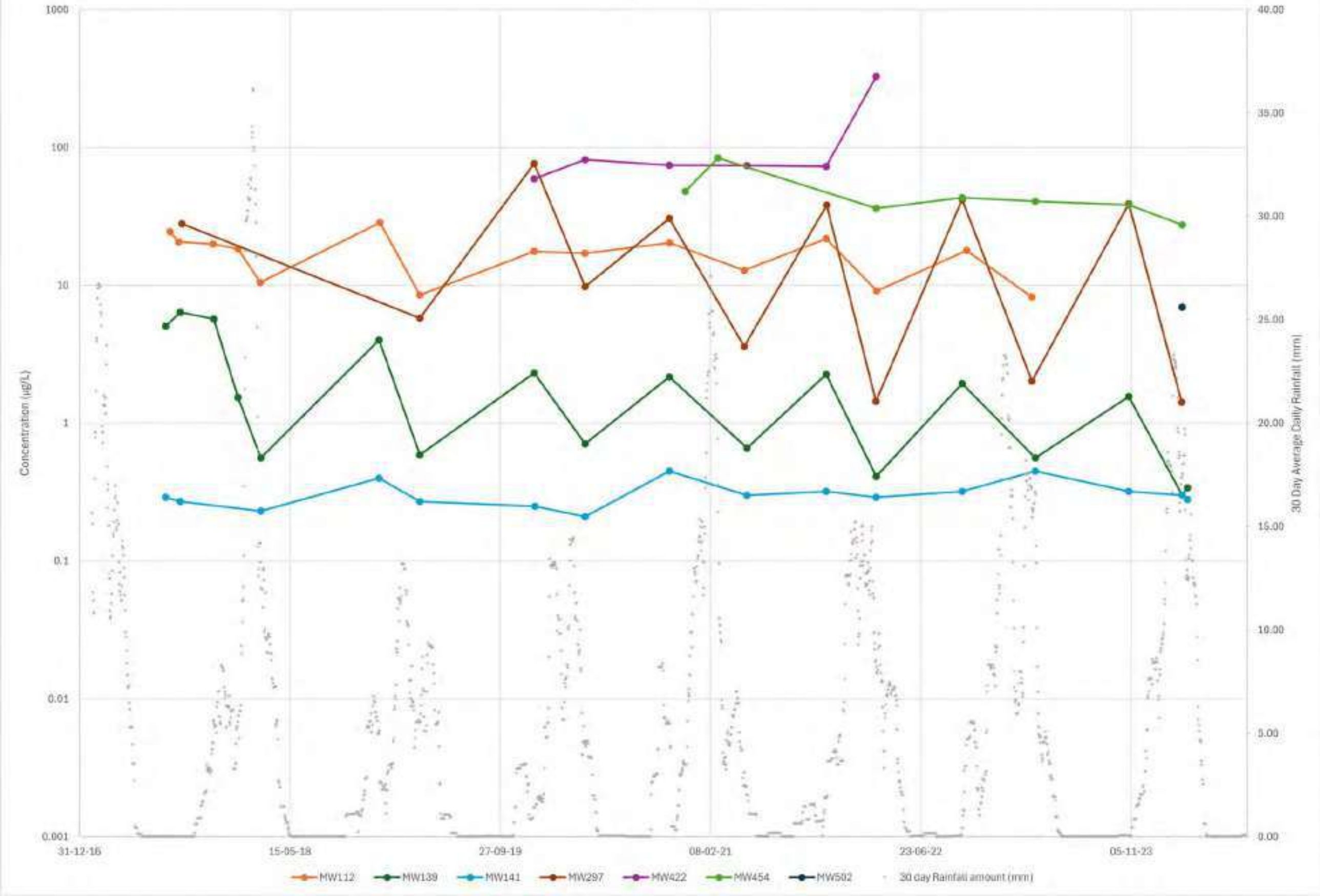


Graph D7 - Groundwater Temporal Trend - PFOA

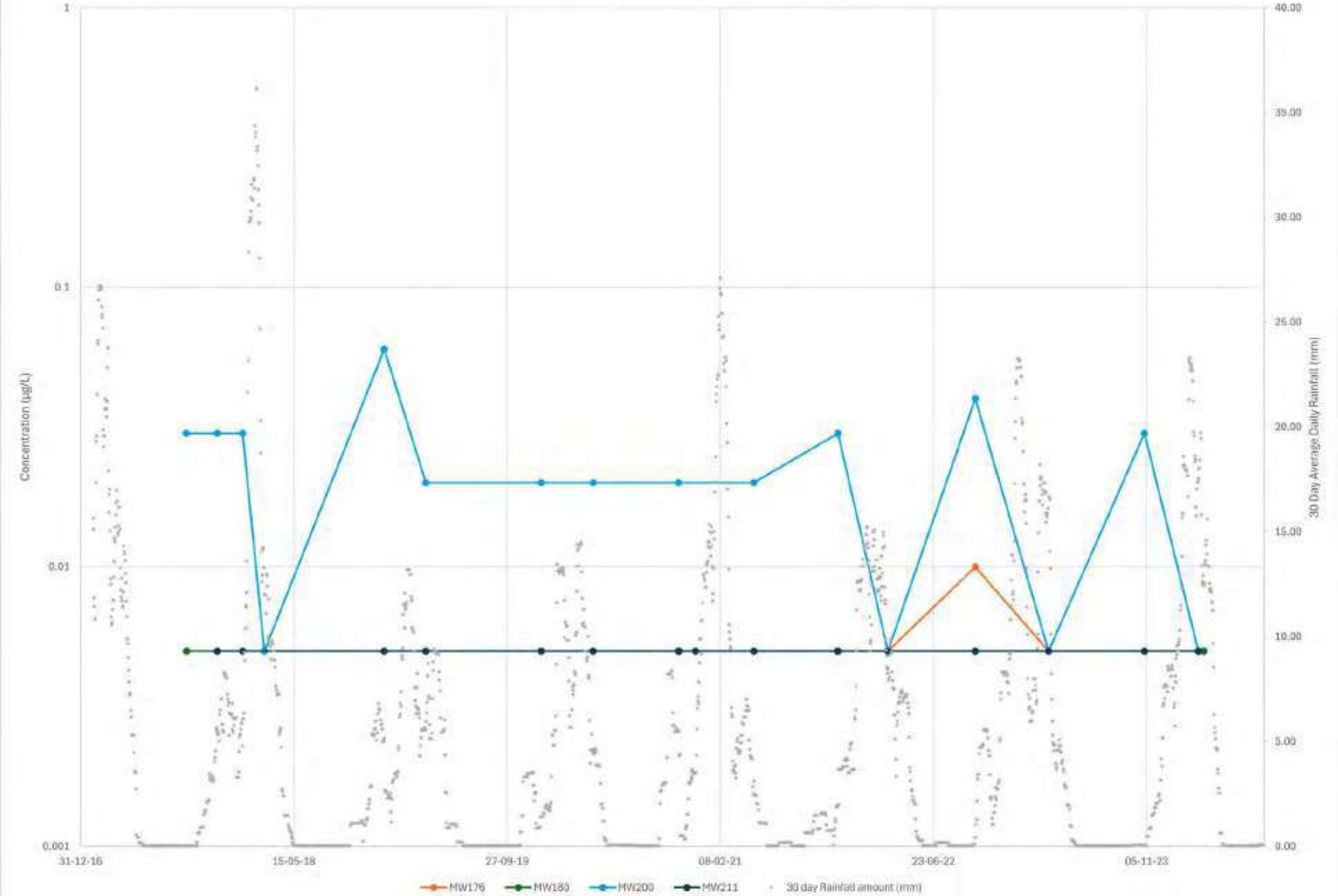
Southeast



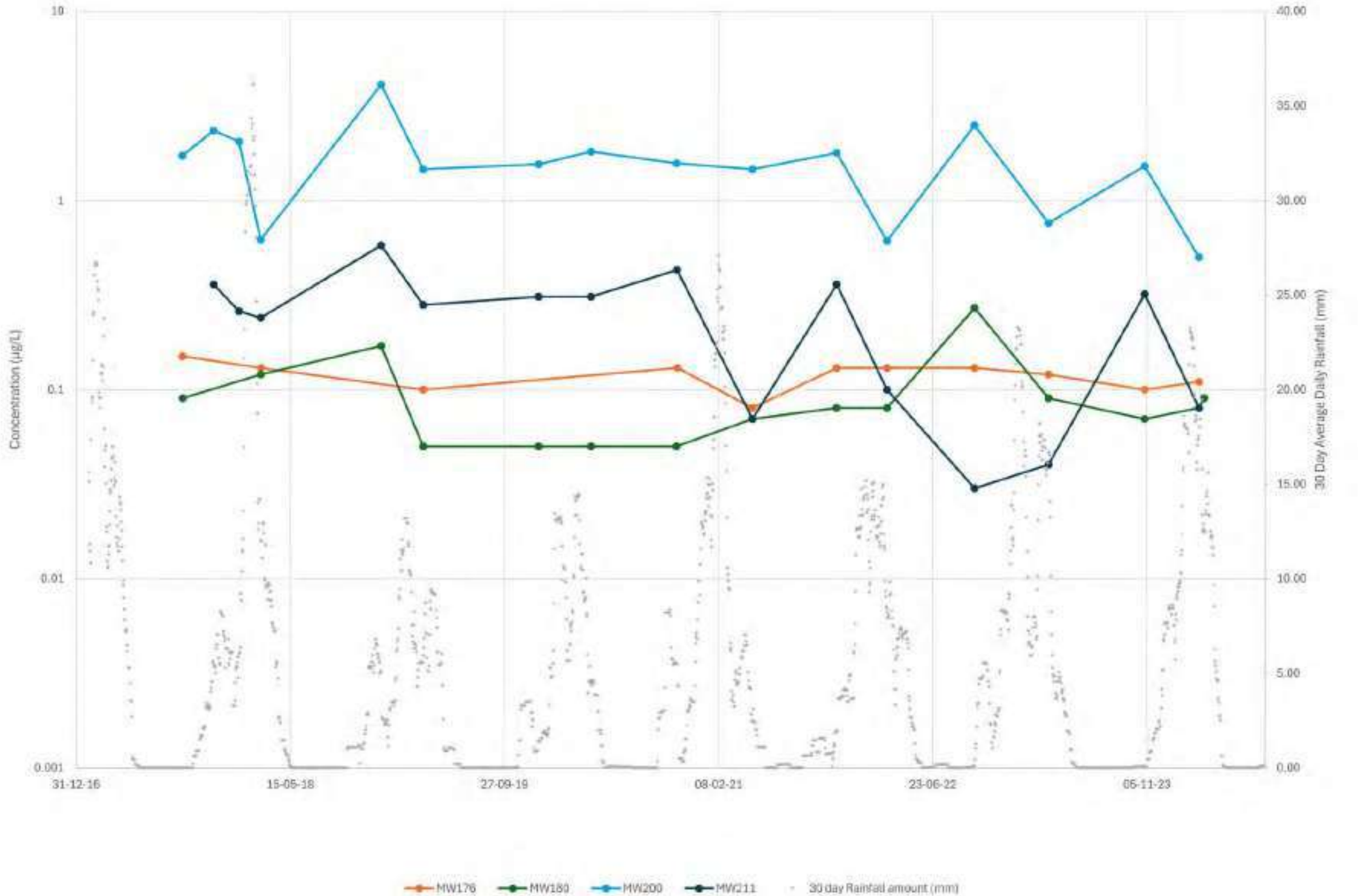
Graph D8 - Groundwater Temporal Trend - PFOS + PFHxS
Southeast



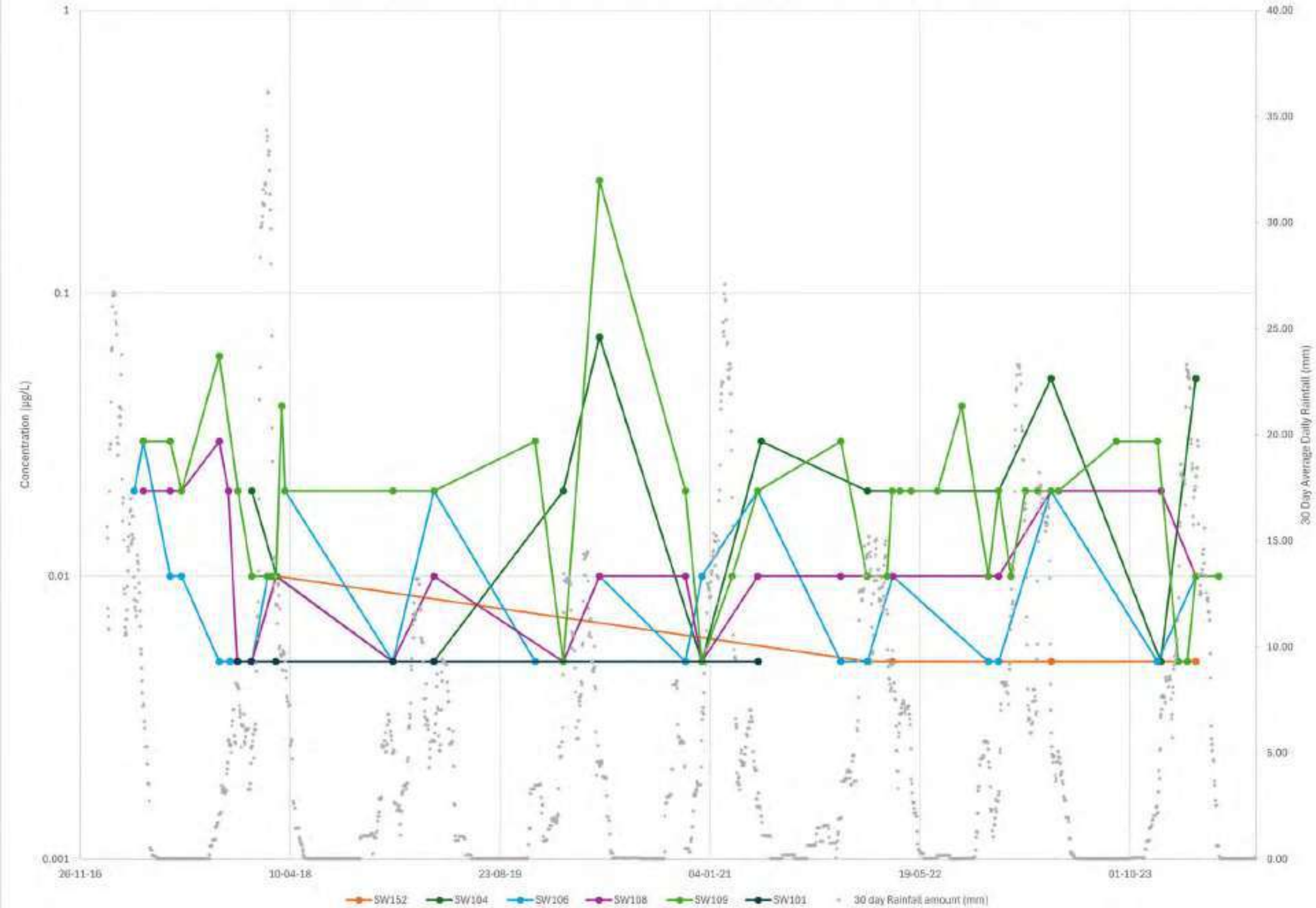
Graph D9 - Groundwater Temporal Trend - PFOA
South of the Base



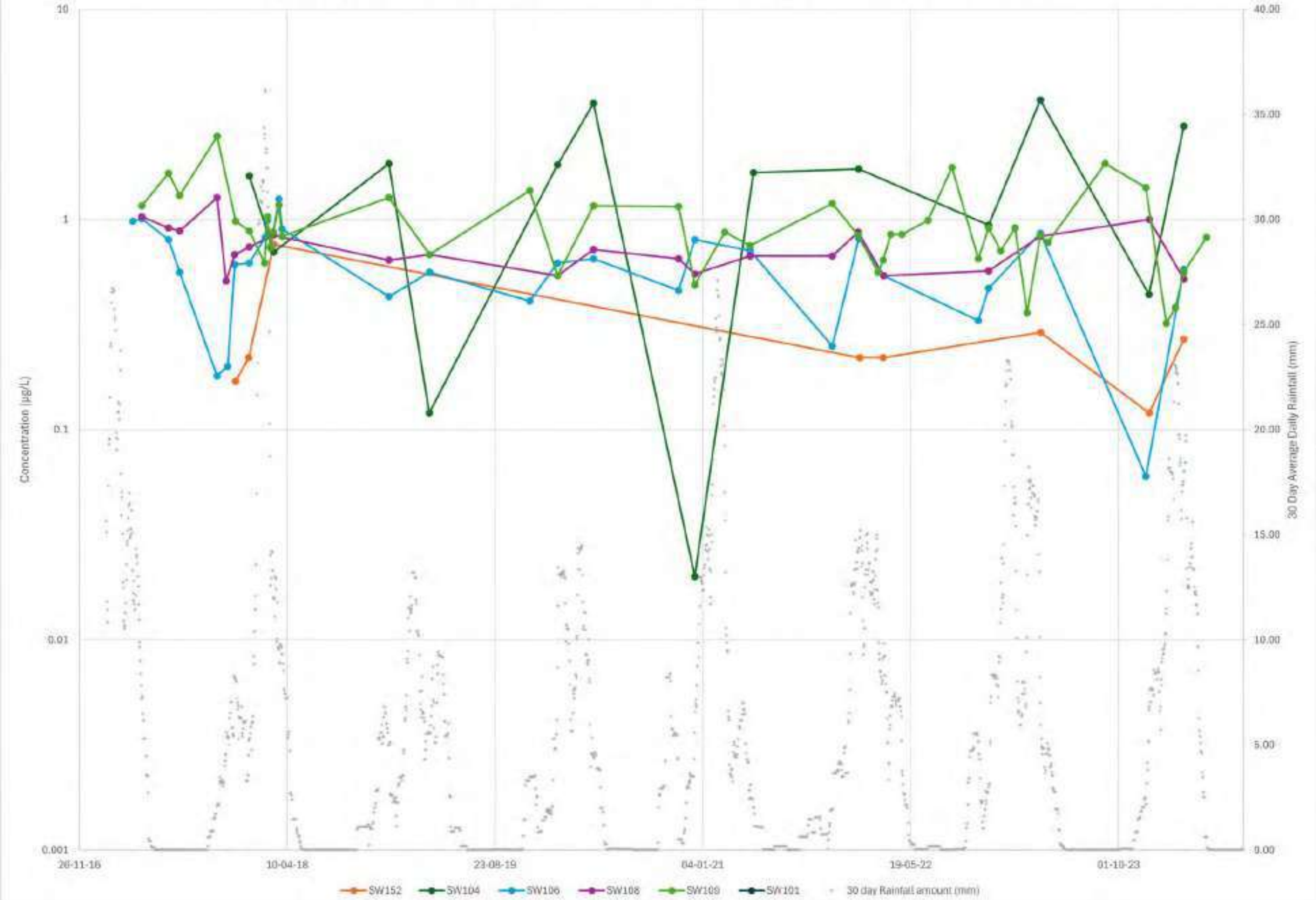
Graph D10 - Groundwater Temporal Trend - PFOS + PFHxS
South of the Base



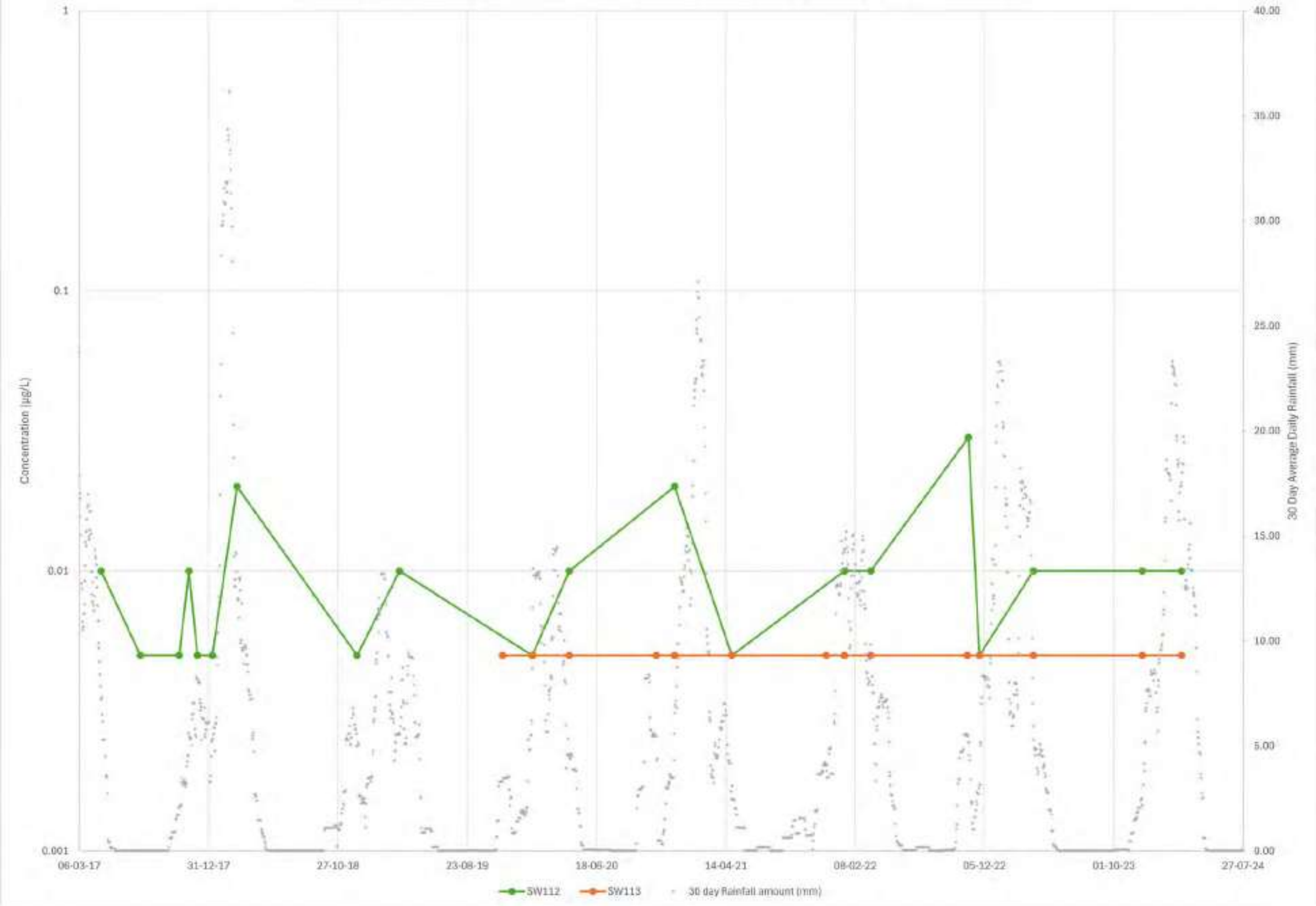
Graph D11 - Surface Water Temporal Trend - PFOA, Rapid Creek (Freshwater)



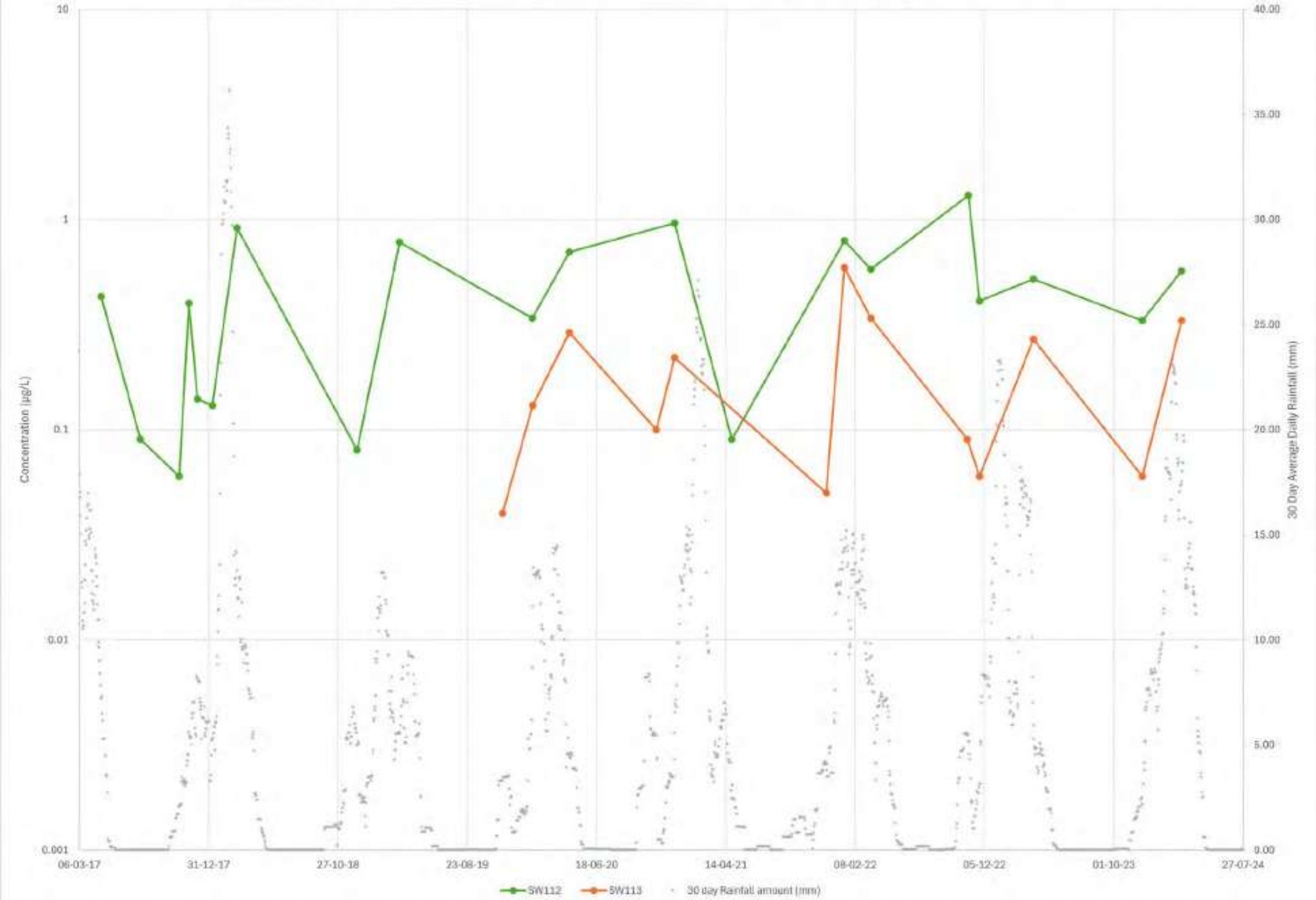
Graph D12 - Surface Water Temporal Trend - PFOS + PFHxS, Rapid Creek (Freshwater)



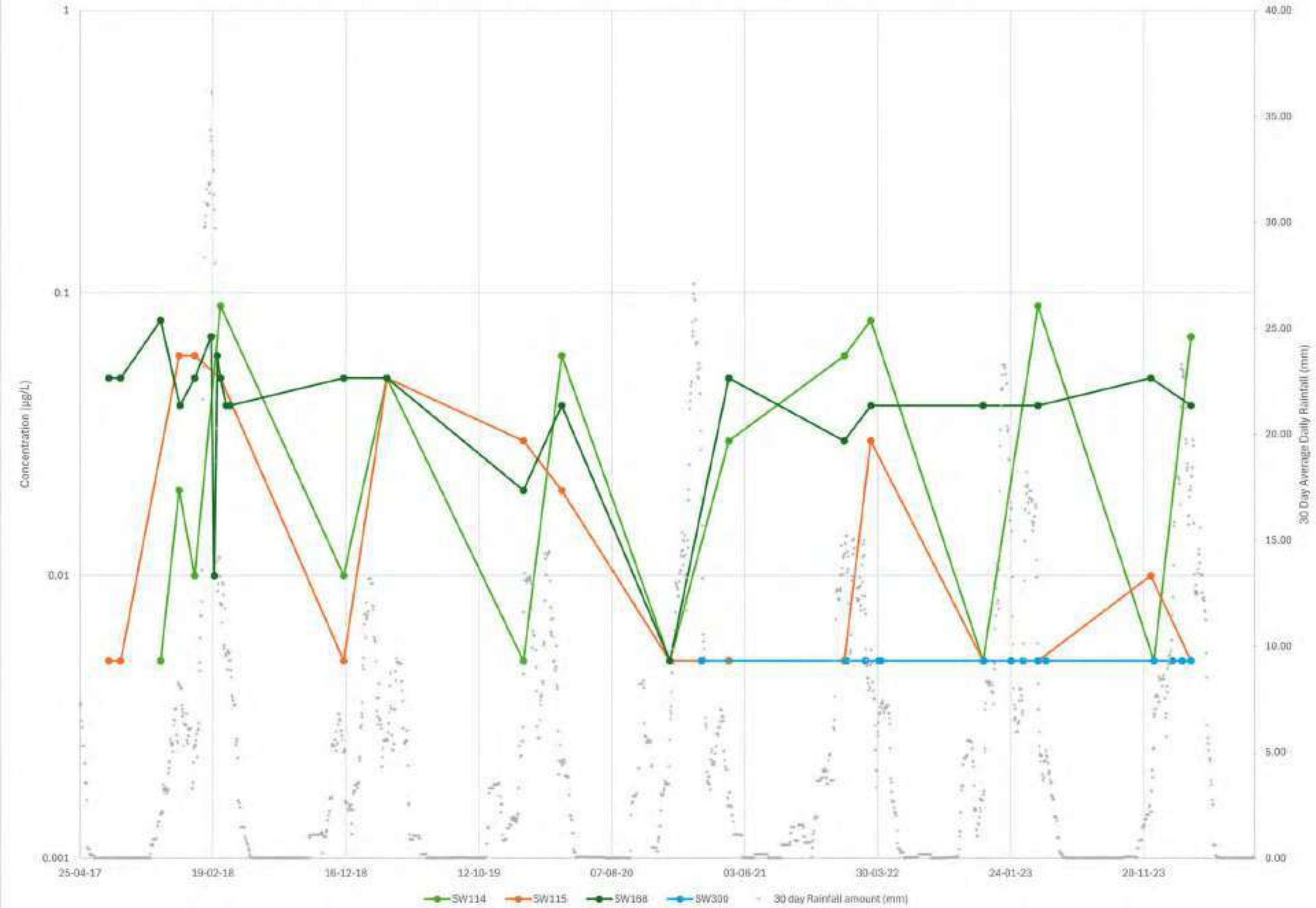
Graph D13 - Surface Water Temporal Trend - PFOA, Rapid Creek (Estruarine Water)



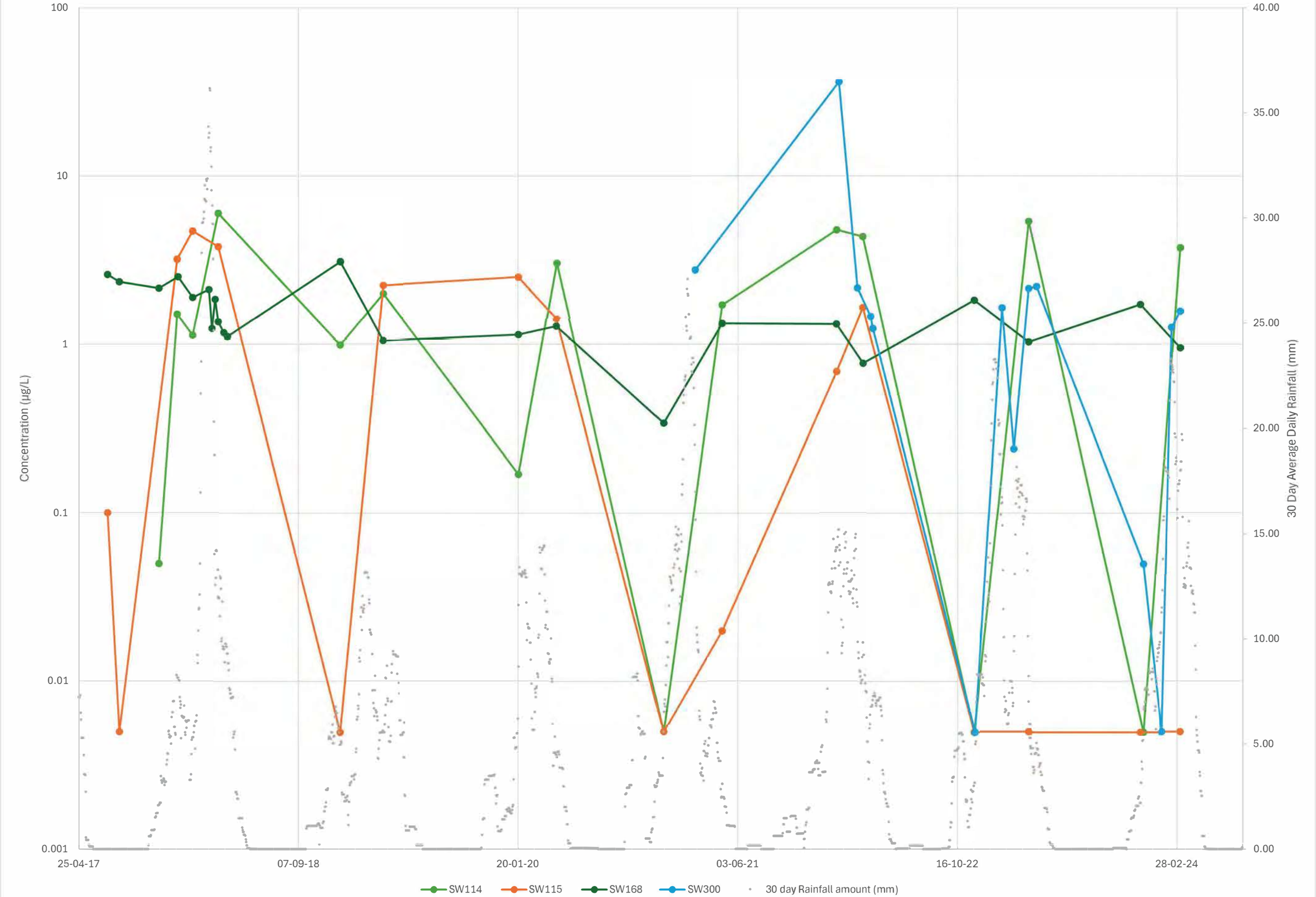
Graph D14 - Surface Water Temporal Trend - PFHxS + PFOS, Rapid Creek (Estruarine Water)



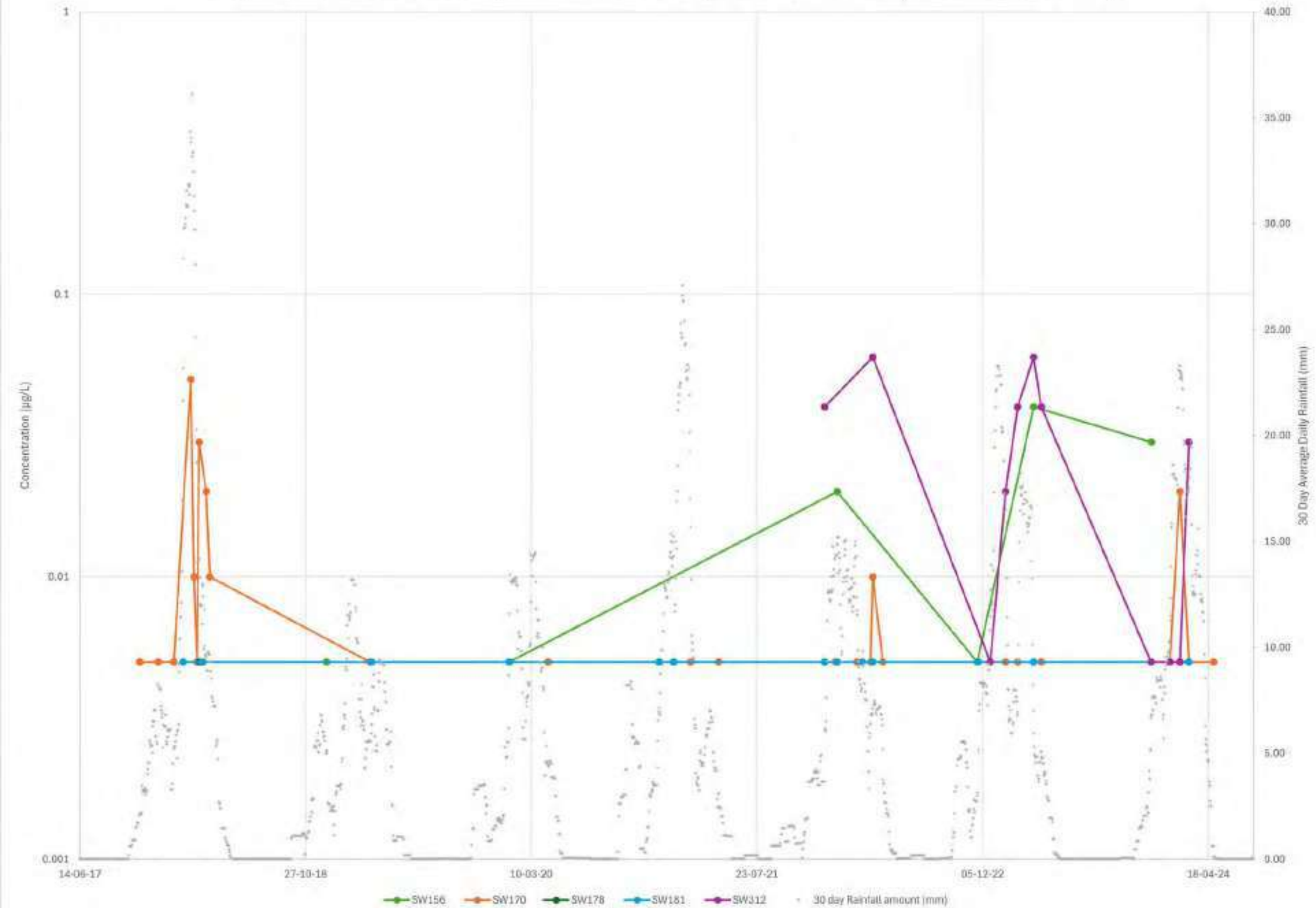
Graph D15 - Surface Water Temporal Trend - PFOA, Rapid Creek Catchment (Surface Drains)



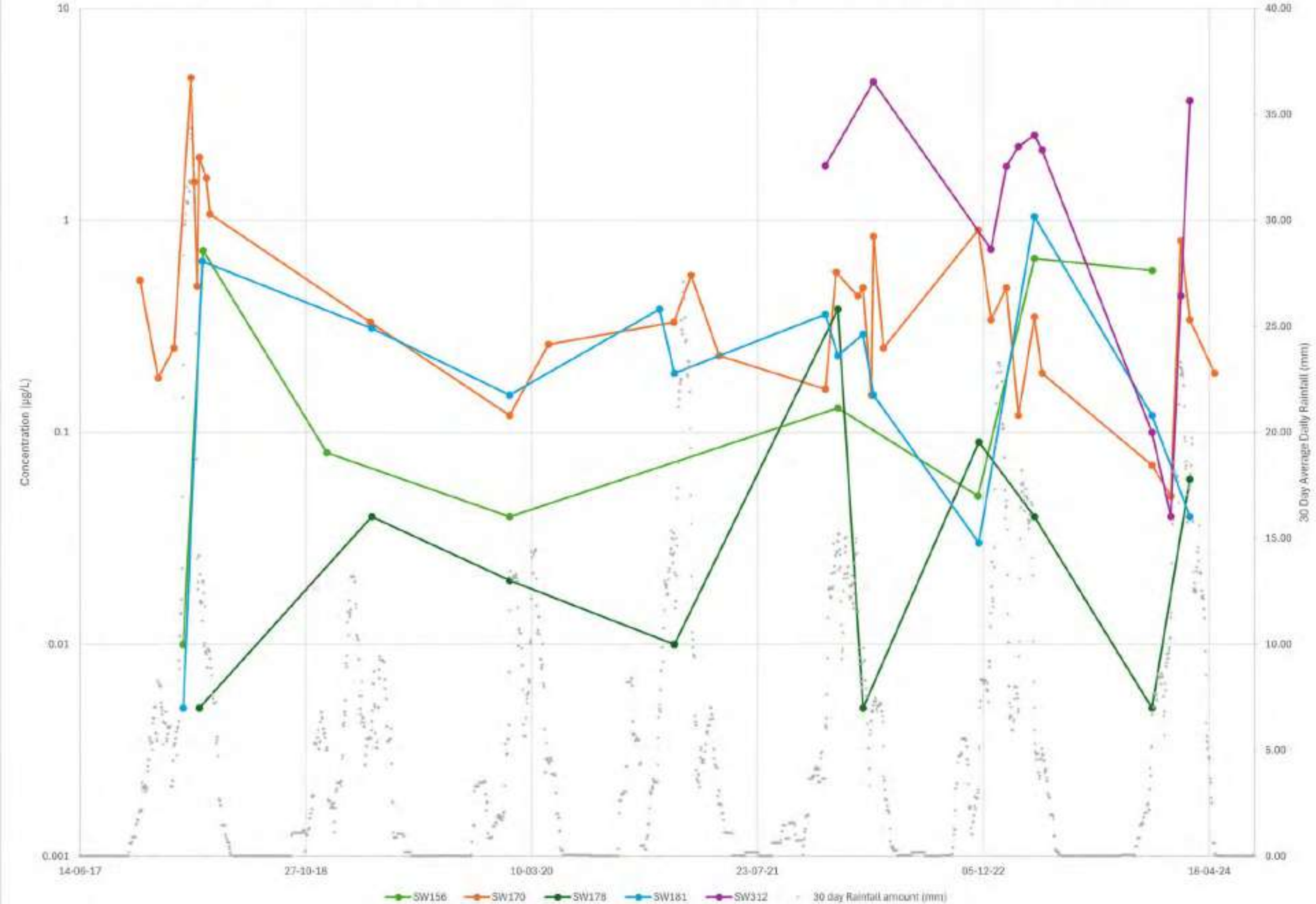
Graph D16 - Surface Water Temporal Trend - PFHxS + PFOS, Rapid Creek Catchment (Surface Drains)



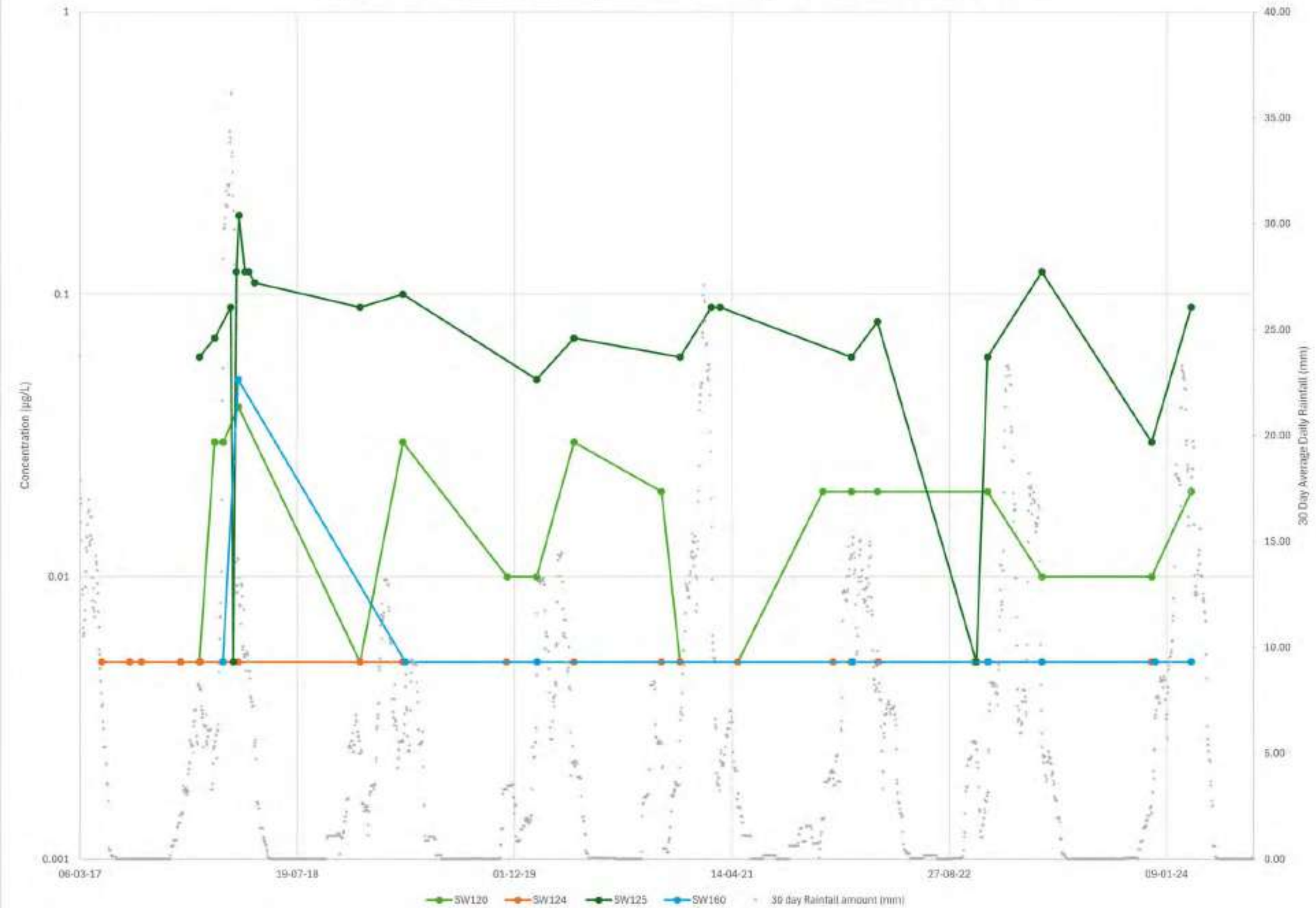
Graph D17 - Surface Water Temporal Trend - PFOA, Rapid Creek Catchment (on-Base Source Areas)



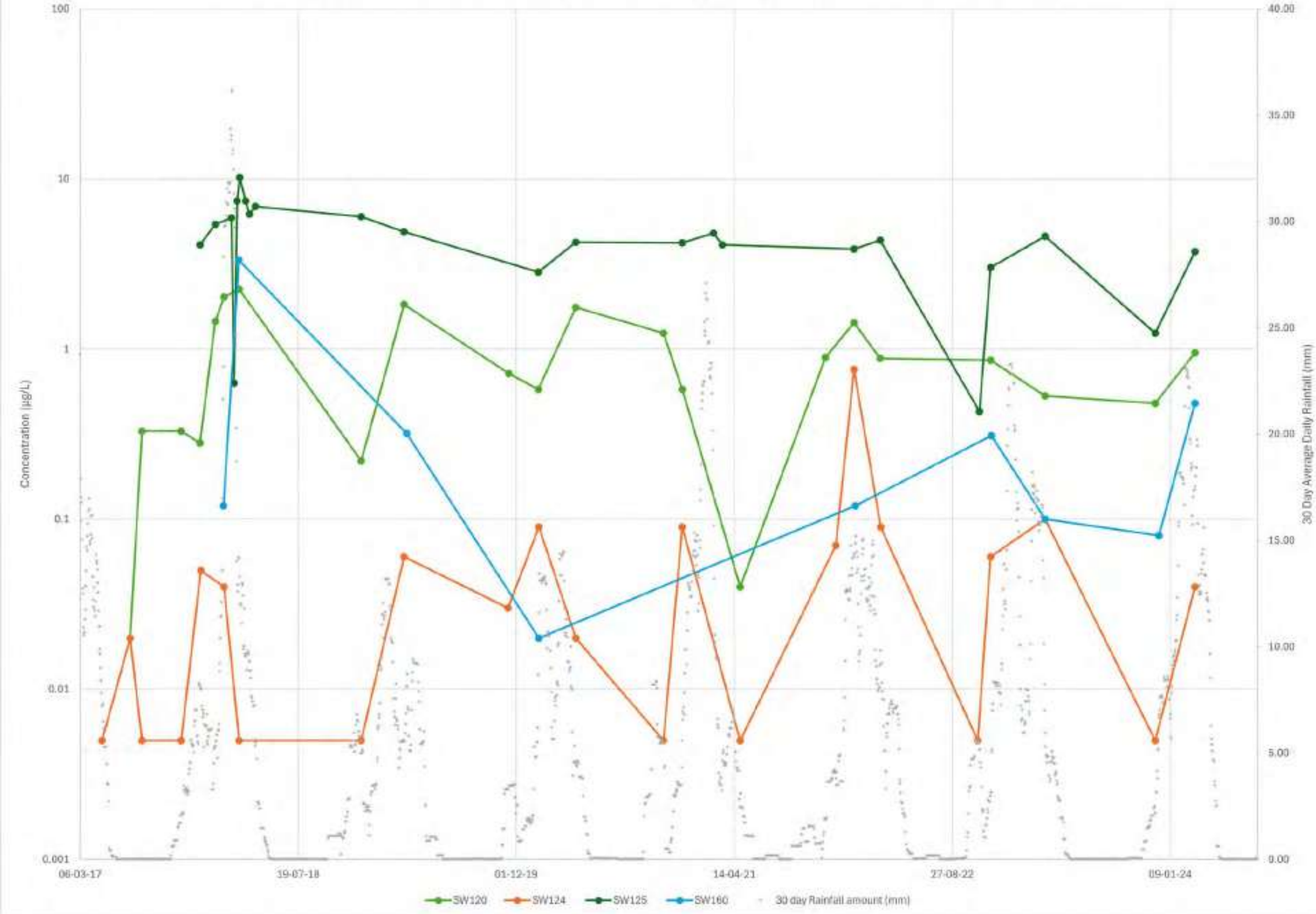
Graph D18 - Surface Water Temporal Trend - PFOA, Rapid Creek Catchment (on-Base Source Areas)



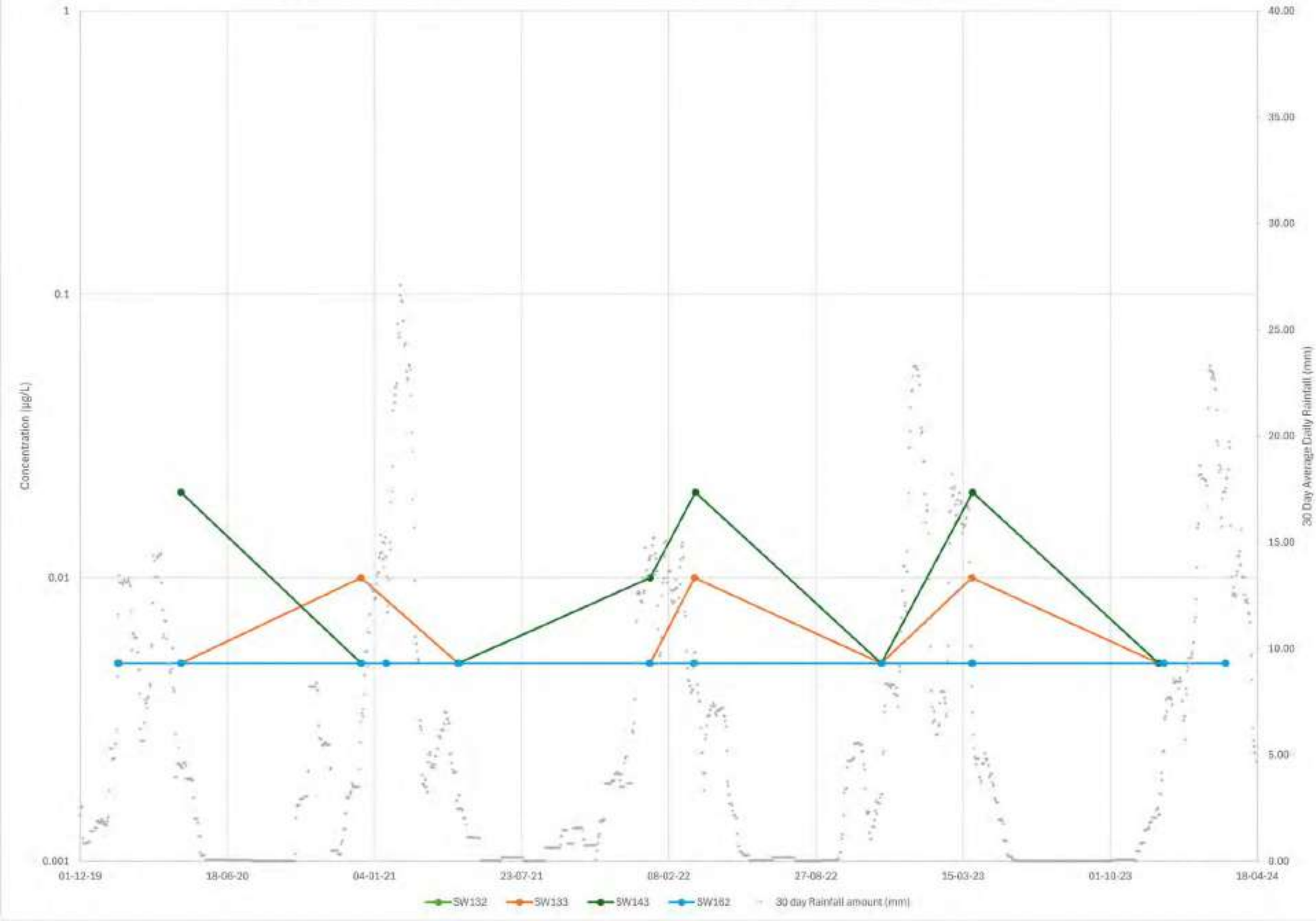
Graph D19 - Surface Water Temporal Trend - PFOA, Ludmilla Creek Catchment



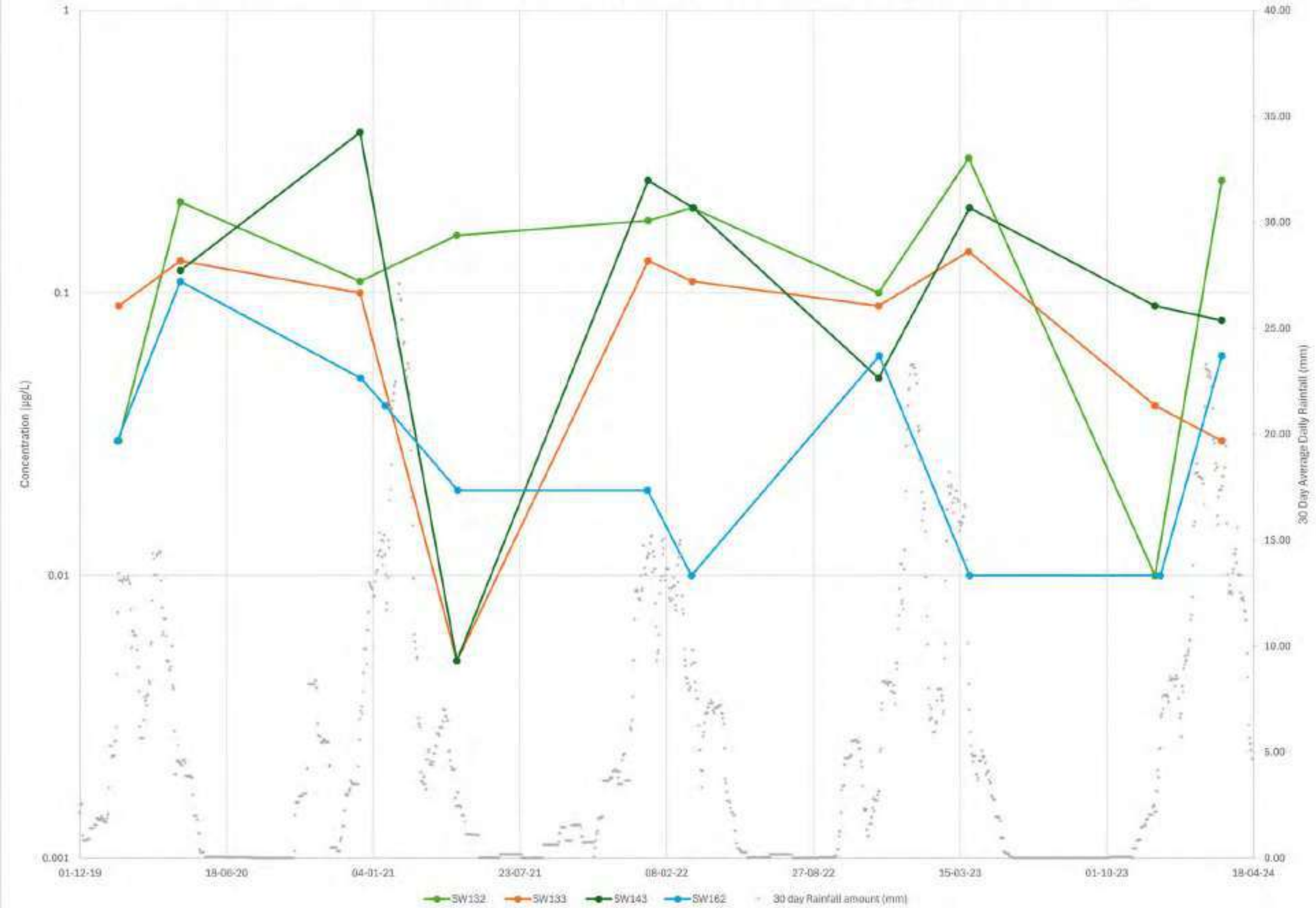
Graph D20 - Surface Water Temporal Trend - PFHxS + PFOS, Ludmilla Creek Catchment



Graph D21 - Surface Water Temporal Trend - PFOA, Reichardt and Sadgroves Creek Catchments



Graph D22 - Surface Water Temporal Trend - PFHxS + PFOS, Reichardt and Sadgroves Creek Catchments



APPENDIX E: MANN-KENDALL OUTPUTS

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	West	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW107	MW128	MW148	MW209	MW210	MW125	
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Jul-17	0.29	0.14				0.005	
2	Aug-17	0.21		0.14				
3	Sep-17		0.17	0.21			0.005	
4	Nov-17	0.26	0.2	0.14	0.01	0.06		
5	Jan-18	0.19	0.17	0.11	0.01	0.03	0.005	
6	Mar-18	0.17	0.17	0.12	0.01	0.02	0.02	
7	May-18		0.2	0.15				
8	Dec-18	0.17	0.12	0.12	0.01	0.02		
9	Mar-19	0.16	0.14	0.11	0.01	0.03		
10	Dec-19	0.15	0.13	0.082	0.01	0.04	0.05	
11	Apr-20	0.22	0.2	0.12	0.01	0.05	0.11	
12	Nov-20	0.24	0.21	0.13	0.01	0.05	0.13	
13	Dec-20		0.16	0.12				
14	Feb-21		0.15	0.09				
15	Apr-21	0.16		0.12	0.01	0.06		
16	May-21		0.12				0.12	
17	Nov-21	0.27	0.12		0.01	0.02	0.11	
18	Mar-22	0.16	0.1		0.01	0.02		
19	Sep-22	0.17		0.11	0.01	0.05	0.09	
20	Oct-22		0.19					
21	Mar-23	0.22	0.1	0.1	0.01	0.02	0.15	
22	Oct-23	0.14		0.1	0.01	0.05	0.06	
23	Nov-23		0.11					
24	Mar-24	0.13	0.11	0.09	0.01	0.03	0.08	
Coefficient of Variation:		0.28	0.24	0.24	0.00	0.42	0.72	
Mann-Kendall Statistics (S):		-37	-74	-75	0	1	36	
Confidence Factor:		93.1%	99.1%	99.7%	50.0%	50.0%	98.4%	
Concentration Trend:		Stable	Decreasing	Decreasing	Stable	Stable	Increasing	

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	West	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW215	MW405	MW451	MW452	MW103	MW103 - Wet	MW103 - Dry
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Jul-17	0.005				0.25		0.25
2	Aug-17	0.005	0.11			0.31		0.31
3	Nov-17		0.08			0.02		0.02
4	Jan-18	0.005	0.35					
5	Feb-18		0.29					
6	Mar-18	0.02	0.04			0.2	0.2	
7	Dec-18		0.14			0.21		0.21
8	Mar-19		0.36			0.2	0.2	
9	Dec-19	0.05	0.06			0.23		0.23
10	Apr-20	0.11				0.28	0.28	
11	Nov-20	0.13				0.79		0.79
12	Dec-20			0.005	0.06			
13	Feb-21							
14	Mar-21			0.04	0.06			
15	Apr-21		0.33			0.62	0.62	
16	May-21	0.12						
17	Nov-21	0.11				0.69		0.69
18	Mar-22			0.005	0.05	0.28	0.28	
19	Sep-22	0.09		0.005	0.06	1.11		1.11
20	Mar-23	0.15		0.04	0.09	0.23	0.23	
21	Oct-23	0.06		0.005	0.06	0.19		0.19
22	Mar-24	0.08		0.005	0.06	0.2	0.2	
Coefficient of Variation:		0.72	0.69	1.14	0.20	0.79	0.53	0.85
Mann-Kendall Statistics (S):		36	4	-2	3	15	1	8
Confidence Factor:		98.4%	62.3%	56.0%	61.8%	73.6%	50.0%	76.7%
Concentration Trend:		Increasing	Stable	No Trend	Stable	Stable	Stable	Stable

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	West	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	**MW107**	**MW128**	**MW148**	**MW209**	**MW210**	**MW125**	
Sampling Event	**Sampling Date**	**Sum of PFOS+PFHxS µg/L**						
1	Jul-17	14.1	9.6	8.8			0.1	
2	Sep-17	12.1	10	8			0.12	
3	Nov-17	14.8	10.4	10.1	0.36	4.31		
4	Jan-18	11.8	9.7	10.3	0.26	2.58	0.33	
5	Mar-18	8.8	11	10.2	0.24	1.52	0.88	
6	May-18		10	9.2				
7	Dec-18	13.9	10.2	11	0.58	2.93	3.84	
8	Mar-19	9.1	8.51	7	0.28	1.93		
9	Dec-19	9.71	8.41	7.1	0.005	2.83		
10	Apr-20	10.4	10.8	7.2	0.005	3.4	7.43	
11	Nov-20	10.9	12	9.62	0.005	3.99	7.82	
12	Dec-20		10.7	8.5				
13	Feb-21		21.8	8				
14	Apr-21	9.58			0.07	4.28		
15	May-21		6.74	6.45			7.78	
16	Nov-21	13.2	7.5		0.05	1.49	7.26	
17	Mar-22	8.46	5.66		0.005	1.32		
18	Sep-22	9.11		8.56	0.005	2.87	5.97	
19	Oct-22		9.11					
20	Mar-23	11.8	5.52	8.74	0.005	1.91	9.32	
21	Oct-23	8.15	4.71	7.79	0.005	3.29	4.59	
22	Mar-24	8.5	4.73	5.3	0.005	1.99	4.38	
Coefficient of Variation:		0.20	0.39	0.18	1.42	0.37	0.72	
Mann-Kendall Statistics (S):		-59	-71	-51	-56	-12	23	
Confidence Factor:		99.2%	98.8%	97.1%	99.7%	70.7%	91.0%	
Concentration Trend:		Decreasing	Decreasing	Decreasing	Decreasing	Stable	Stable	

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	West	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW215	MW405	MW451	MW452	MW103	MW103 - Wet	MW103 - Dry
Sampling Event	Sampling Date	Sum of PFOS+PFHxS µg/L						
1	Jul-17	0.1				17.3		17.3
2	Aug-17		9.3			12.7		12.7
3	Sep-17	0.12						
4	Nov-17		6.2			1.96		1.96
5	Jan-18	0.33	42.2					
6	Feb-18		17.1					
7	Mar-18	0.88	2.03			17.2	17.2	
8	Dec-18		10.8			16.7		16.7
9	Mar-19		34.7			13.1	13.1	
10	Dec-19	3.84	4.72			21.7		21.7
11	Apr-20	7.43				16	16	
12	Nov-20	7.82				42		42
13	Dec-20			0.02	4.8			
14	Mar-21			3.5	4.3			
15	Apr-21		22.8			40.3	40.3	
16	May-21	7.78						
17	Nov-21	7.26				43.8		43.8
18	Mar-22			0.05	2.75	21.9	21.9	
19	Sep-22	5.97		0.02	5.66	48.6		48.6
20	Mar-23	9.32		2.38	4.74	14.1	14.1	
21	Oct-23	4.59		0.005	3.76	13.6		13.6
22	Mar-24	4.38		0.13	2.94	9.26	9.26	
Coefficient of Variation:		0.72	0.84	1.66	0.25	0.63	0.54	0.68
Mann-Kendall Statistics (S):		35	1	-3	-8	15	-5	16
Confidence Factor:		98.1%	50.0%	61.8%	85.3%	73.6%	72.6%	94.1%
Concentration Trend:		Increasing	Stable	No Trend	Stable	Stable	Stable	Stable

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	North	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW156	MW185	MW189	MW190	MW191	MW193	MW194
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Aug-17				0.06			
2	Sep-17	0.16	0.005	0.005	0.06	0.04	0.07	0.08
3	Nov-17	0.16	0.005		0.06	0.06	0.06	0.08
4	Jan-18	0.1	0.005		0.05	0.05	0.06	
5	Feb-18						0.02	0.06
6	Mar-18	0.17	0.005	0.005	0.01	0.03	0.01	0.05
7	May-18	0.21			0.04	0.05		
8	Dec-18	0.14	0.02			0.05	0.08	0.08
9	Feb-19		0.005					
10	Mar-19	0.09	0.005			0.04	0.06	0.07
11	Dec-19	0.01	0.01			0.03	0.06	0.04
12	Apr-20	0.005		0.005		0.03	0.01	0.06
13	Nov-20	0.005	0.02			0.005	0.01	0.06
14	Dec-20	0.02						
15	Feb-21	0.005						
16	Apr-21	0.06	0.005			0.03	0.005	0.04
17	Nov-21	0.07	0.01		0.08	0.04		0.08
18	Mar-22	0.13	0.005		0	0.03		0.06
19	Sep-22	0.04	0.02		0.08	0.05		0.08
20	Mar-23	0.16	0.005		0.01	0.04		0.07
21	Oct-23	0.07	0.01		0.04	0.04		0.04
22	Mar-24	0.13	0.005		0	0.03		0.05
Coefficient of Variation:		0.72	0.68	*Insufficient data points*	0.72	0.33	0.72	0.24
Mann-Kendall Statistics (S):		-32	16		-24	-34	-28	-27
Confidence Factor:		86.1%	75.0%		94.3%	91.3%	98.2%	87.9%
Concentration Trend:		Stable	Stable		Stable	Stable	Decreasing	Stable

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans",* [redacted]*, Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	North	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW195	MW197	MW240	MW241			
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Apr-17			3.7	3.2			
2	Aug-17			5.5				
3	Sep-17	0.02	0.14					
4	Nov-17	0.005						
5	Jan-18	0.02	0.11	24	2.9			
6	Mar-18	0.01	0.15	5.1	3.6			
7	May-18			4.8				
8	Dec-18	0.02	0.14					
9	Mar-19	0.03	0.12	3.1	2.5			
10	Dec-19	0.005						
11	Apr-20	0.02	0.18	5.05	1.55			
12	Nov-20	0.005	0.3	8.4	2.63			
13	Dec-20			5.2	2			
14	Mar-21			9.9	3.2			
15	Apr-21		0.15	4.41	1.62			
16	May-21	0.005						
17	Nov-21	0.02	0.16					
18	Mar-22	0.005	0.12	3.71	3.1			
19	Sep-22	0.01						
20	Mar-23	0.02	0.12	2.85	2.7			
21	Oct-23	0.005						
22	Mar-24	0.005	0.08	2.6	2.23			
Coefficient of Variation:		0.65	0.37	0.87	0.25			
Mann-Kendall Statistics (S):		-25	-7	-29	-15			
Confidence Factor:		86.0%	66.0%	93.7%	83.1%			
Concentration Trend:		Stable	Stable	Stable	Stable			

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans",* [redacted]*, Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	North	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW156	MW185	MW189	MW190	MW191	MW193	MW194
Sampling Event	**Sampling Date**	**Sum of PFOS+PFHxS µg/L**						
1	Aug-17	8			4.2			
2	Sep-17	9.2	0.03	0.08	3.5	2.8	4.1	4.9
3	Nov-17	11.5	0.02		4.1	3.9	4.3	6
4	Jan-18	7.5	0.005		3.3	3.02	3.8	
5	Feb-18						1.15	3.89
6	Mar-18	12.3	0.005	0.05	0.99	2.43	0.94	3.91
7	May-18	11.7			2.7	3.4		
8	Dec-18	8.1	0.7			3.9	5	4.8
9	Feb-19		0.17					
10	Mar-19	7.1	0.05			2.61	3.1	3.3
11	Dec-19	1.17	0.36			2.46	3.13	2.96
12	Apr-20	0.58		0.1		1.91	1.37	3.3
13	Nov-20	0.47	0.6			0.43	0.95	3.19
14	Dec-20	1.31						
15	Feb-21	0.89						
16	Apr-21	4.78	0.15			1.92	0.13	2.6
17	Nov-21	4.79	0.2		3.9	2.01		4.65
18	Mar-22	7.26	0.02		0.03	2.07		3.64
19	Sep-22	4.76	0.38		4.39	3.18		3.84
20	Mar-23	8.72	0.05		0.49	2.65		4.75
21	Oct-23	5.25	0.37		1.85	2.26		2.51
22	Mar-24	8.91	0.1		0.3	1.46		2.68
Coefficient of Variation:		0.61	1.10	*Insufficient data points*	0.67	0.35	0.66	0.26
Mann-Kendall Statistics (S):		-34	27		-28	-47	-27	-47
Confidence Factor:		85.8%	87.9%		96.8%	97.1%	97.9%	98.1%
Concentration Trend:		Stable	No Trend		Decreasing	Decreasing	Decreasing	Decreasing

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted] Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:		**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW195	MW197	MW240	MW241			
Sampling Event	**Sampling Date**	**Sum of PFOS+PFHxS µg/L**						
1	Apr-17			29.7	23.3			
2	Aug-17			59				
3	Sep-17	1.23	6.3					
4	Nov-17	0.81						
5	Jan-18	1.86	10	150	28.5			
6	Mar-18	1.18	10.8	39	23.7			
7	May-18			20				
8	Dec-18	1.97	12.4					
9	Mar-19	1.32	9.4	22.3	12.3			
10	Dec-19	0.11						
11	Apr-20	4.02	9.91	35.1	11.1			
12	Nov-20	0.3	23.2	102	22			
13	Dec-20			51	12.8			
14	Mar-21			52	14.4			
15	Apr-21		8.84	38.1	9.2			
16	May-21	0.09						
17	Nov-21	1.77	9.61					
18	Mar-22	0.2	7.48	26.5	25.3			
19	Sep-22	1.44						
20	Mar-23	1.27	7.2	24.7	27			
21	Oct-23	0.11						
22	Mar-24	0.6	5.69	19.6	19.6			
Coefficient of Variation:		0.88	0.45	0.77	0.36			
Mann-Kendall Statistics (S):		-23	-24	-25	-4			
Confidence Factor:		83.9%	94.3%	90.6%	58.1%			
Concentration Trend:		Stable	Stable	Stable	Stable			

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017 - 2024	**Job ID:**	754-MELEN338204
Region:	Central	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW115	MW133	MW144	MW205	MW303		
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Jul-17			0.07				
2	Aug-17	2.1	0.94	0.09				
3	Aug-17	3						
4	Sep-17					3.7		
5	Nov-17	4.1	0.72	0.08	0.01			
6	Jan-18	1.9	0.59	0.07	0.1	1.2		
7	Mar-18	1.3	1.2	0.03	0.09			
8	May-18	2.3	0.45					
9	Dec-18	3.8	1.4	0.12	0.14	3.3		
10	Mar-19	1.5	0.53	0.05	0.09	0.87		
11	Dec-19	3.05		0.06	0.09			
12	Apr-20	1.48	0.05	0.005	0.005			
13	Nov-20	3.15		0.1	0.02	3.12		
14	Apr-21	1.47		0.05	0.005	1.44		
15	May-21		0.27					
16	Nov-21	1.82	0.54	0.09	0.12	3.34		
17	Mar-22	1.76	0.53	0.03	0.09	0.84		
18	Sep-22		0.005	0.08	0.01	3		
19	Oct-22	1.1	0.8	0.06	0.1	2.78		
20	Nov-22	1.14	0.56		0.07	1.8		
21	Mar-23			0.06				
22	Oct-23	2.36	0.5	0.06	0.1	2.78		
22	Mar-24	1.2	0.66	0.04	0.02	1.23		
Coefficient of Variation:		0.43	0.60	0.44	0.70	0.46		
Mann-Kendall Statistics (S):		-53	-25	-32	-11	-17		
Confidence Factor:		99.0%	90.6%	91.9%	70.8%	89.4%		
Concentration Trend:		Decreasing	Stable	Stable	Stable	Stable		

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted] Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	Central	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW115	MW133	MW144	MW205	MW303		

Sampling Event	Sampling Date	Sum of PFOS+PFHxS µg/L						
1	Jul-17			4.9				
2	Aug-17	386	72	5.5				
3	Sep-17					108		
4	Nov-17	317	61.4	5.4	1.12			
5	Jan-18	158	54.3	4.9	6.1	49		
6	Mar-18	68	112	2.55	4.9			
7	May-18	122	33.8					
8	Dec-18	279	133	7.9	9	129		
9	Mar-19	91	39.8	2.8	5	32		
10	Dec-19	301		4.8	5.83			
11	Apr-20	93.8		2.75	0.7	46.7		
12	Nov-20	309		6.87	1.67	131		
13	Apr-21	110		3.69	0.91	64.7		
14	May-21		14.8					
15	Nov-21	88.6	35.7	5.71	6.88	95.6		
16	Mar-22	85.2	36.7	2.15	4.01	32.9		
17	Sep-22		0.01	4.55	1.45	81.3		
18	Oct-22		56					
19	Nov-22	197						
20	Mar-23	63.6	37.4	3.75	3.04	54.9		
21	Oct-23	228	37	4.6	5.93	93.7		
22	Mar-24	66.9	43.5	1.94	1.39	38.2		
Coefficient of Variation:		0.62	0.67	0.38	0.67	0.48		
Mann-Kendall Statistics (S):		-50	-27	-39	-13	-10		
Confidence Factor:		97.8%	90.1%	94.1%	72.4%	70.9%		
Concentration Trend:		Decreasing	Stable	Stable	Stable	Stable		

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans",* [redacted] *Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017 - 2024	**Job ID:**	754-MELEN338204
Region:	Central	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW115 - Wet	MW133 - Wet	MW144 - Wet	MW205 - Wet	MW303 - Wet		
Sampling Event	Sampling Date	PFOA µg/L						
1	Jan-18	1.9	0.59	0.07	0.1	1.2		
2	Mar-18	1.3	1.2	0.03	0.09			
3	May-18	2.3	0.45					
4	Mar-19	1.5	0.53	0.05	0.09	0.87		
5	Dec-19	3.05		0.06	0.09			
6	Apr-20	1.48	0.05	0.005	0.005			
7	Apr-21	1.47		0.05	0.005	1.44		
8	May-21		0.27					
9	Mar-22	1.76	0.53	0.03	0.09	0.84		
10	Mar-23			0.06				
11	Mar-24	1.2	0.66	0.04	0.02	1.23		
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
Coefficient of Variation:		0.33	0.62	0.45	0.70	0.23		
Mann-Kendall Statistics (S):		-10	-3	-5	-13	0		
Confidence Factor:		82.6%	59.8%	66.2%	93.1%	50.0%		
Concentration Trend:		Stable	Stable	Stable	Stable	Stable		

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017 - 2024	**Job ID:**	754-MELEN338204
Region:	Central	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW115 - Dry	MW133 - Dry	MW144 - Dry	MW205 - Dry	MW303 - Dry		
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Jul-17			0.07				
2	Aug-17	2.1	0.94	0.09				
3	Aug-17	3						
4	Sep-17					3.7		
5	Nov-17	4.1	0.72	0.08	0.1			
6	Dec-18	3.8	1.4	0.12	0.14	3.3		
7	Dec-19	3.05		0.06	0.09			
8	Nov-20	3.15		0.1	0.02	3.12		
9	Nov-21	1.82	0.54	0.09	0.12	3.34		
10	Sep-22		0.005	0.08	0.01	3		
11	Oct-22	1.1	0.8	0.06	0.1			
12	Nov-22	1.14	0.56		0.07	1.8		
13	Oct-23	2.36	0.5	0.06	0.1	2.78		
14								
15								
16								
17								
18								
19								
20								
21								
22								
Coefficient of Variation:		0.40	0.59	0.24	0.52	0.20		
Mann-Kendall Statistics (S):		-15	-12	-12	-7	-15		
Confidence Factor:		89.5%	91.3%	83.7%	73.4%	98.2%		
Concentration Trend:		Stable	Stable	Stable	Stable	Decreasing		

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	Central	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW115 - Wet	MW133 - Wet	MW144 - Wet	MW205 - Wet	MW303 - Wet		
Sampling Event	**Sampling Date**	**Sum of PFOS+PFHxS µg/L**						
1	Jan-18	158	54.3	4.9	6.1	49		
2	Mar-18	68	112	2.55	4.9			
3	May-18	122	33.8					
4	Mar-19	91	39.8	2.8	5	32		
5	Apr-20	93.8		2.75	0.7	46.7		
6	Apr-21	110		3.69	0.91	64.7		
7	May-21		14.8					
8	Mar-22	85.2	36.7	2.15	4.01	32.9		
9	Mar-23	63.6	37.4	3.75	3.04	54.9		
10	Mar-24	66.9	43.5	1.94	1.39	38.2		
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
Coefficient of Variation:		0.32	0.62	0.32	0.64	0.26		
Mann-Kendall Statistics (S):		-18	-4	8	-12	1		
Confidence Factor:		96.2%	64.5%	80.7%	91.3%	50.0%		
Concentration Trend:		Decreasing	Stable	Stable	Stable	Stable		

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans",* [redacted] *Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	Central	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW115 - Dry	MW133 - Dry	MW144 - Dry	MW205 - Dry	MW303 - Dry		
Sampling Event	**Sampling Date**	**Sum of PFOS+PFHxS µg/L**						
1	Jul-17			4.9				
2	Aug-17	386	72	5.5				
3	Sep-17					108		
4	Nov-17	317	61.4	5.4	1.12			
5	Dec-18	279	133	7.9	9	129		
6	Dec-19	301		4.8	5.83			
7	Nov-20	309		6.87	1.67	131		
8	Nov-21	88.6	35.7	5.71	6.88	95.6		
9	Sep-22		0.01	4.55	1.45	81.3		
10	Oct-22		56					
11	Nov-22	197						
12	Oct-23	228	37	4.6	5.93	93.7		
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
Coefficient of Variation:		0.35	0.73	0.20	0.69	0.19		
Mann-Kendall Statistics (S):		-16	-9	-8	1	-7		
Confidence Factor:		96.8%	88.5%	76.7%	50.0%	87.0%		
Concentration Trend:		Decreasing	Stable	Stable	Stable	Stable		

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans",* [redacted], *Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	Southeast	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW112	MW139	MW141	MW297	MW454		
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Jul-17		0.05	0.005				
2	Aug-17	0.33	0.07	0.005	0.53			
3	Nov-17	0.34	0.06					
4	Jan-18	0.25	0.02					
5	Mar-18	0.19	0.005	0.005				
6	Dec-18	0.31	0.04	0.005				
7	Mar-19	0.15	0.005	0.005	0.11			
8	Dec-19	0.27	0.02	0.005	1.31			
9	Apr-20	0.32	0.01	0.005	0.15			
10	Nov-20	0.31	0.03	0.005	0.49			
11	Dec-20					0.9		
12	Feb-21					0.57		
13	Apr-21	0.22			0.05			
14	May-21		0.01	0.005				
15	Nov-21	0.32	0.03	0.005	1.04			
16	Mar-22	0.16	0.005	0.005	0.02	0.64		
17	Sep-22		0.04	0.005	0.75	0.81		
18	Oct-22	0.29						
19	Mar-23	0.15	0.005	0.005	0.05	0.57		
20	Oct-23		0.02	0.005	0.66	0.66		
21	Mar-24		0.005	0.005	0.02	0.5		
22								
Coefficient of Variation:		0.27	0.83	0.00	1.02	0.21		
Mann-Kendall Statistics (S):		-26	-48	0	-16	-8		
Confidence Factor:		91.4%	97.4%	50.0%	84.8%	85.3%		
Concentration Trend:		Stable	Decreasing	Stable	No Trend	Stable		

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	Southeast	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW112 - Wet	MW112 - Dry	MW139 - Wet	MW139 - Dry	MW297 - Wet	MW297 - Dry	
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Jul-17				0.05			
2	Aug-17		0.33		0.07		0.53	
3	Nov-17	0.34			0.06			
4	Jan-18	0.25		0.02				
5	Mar-18	0.19		0.005				
6	Dec-18		0.31		0.04			
7	Mar-19	0.15		0.005		0.11		
8	Dec-19		0.27		0.02		1.31	
9	Apr-20	0.32		0.01		0.15		
10	Nov-20		0.31		0.03		0.49	
11	Dec-20							
12	Feb-21							
13	Apr-21	0.22				0.05		
14	May-21			0.01				
15	Nov-21		0.32		0.03		1.04	
16	Mar-22	0.16		0.005		0.02		
17	Sep-22				0.04		0.75	
18	Oct-22		0.29					
19	Mar-23	0.15		0.005		0.05		
20	Oct-23				0.02		0.66	
21	Mar-24			0.005		0.02		
22								
Coefficient of Variation:		0.34	0.07	0.65	0.43	0.79	0.40	
Mann-Kendall Statistics (S):		-15	-4	-9	-19	-9	-1	
Confidence Factor:		95.8%	71.3%	83.9%	97.0%	93.4%	50.0%	
Concentration Trend:		Decreasing	Stable	Stable	Decreasing	Stable	Stable	

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	Southeast	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW112	MW139	MW141	MW297	MW454		
Sampling Event	**Sampling Date**	**Sum of PFOS+PFHxS µg/L**						
1	Jul-17		5.06	0.29				
2	Aug-17	24.5	6.4	0.27	28			
3	Nov-17	19.9	5.7					
4	Jan-18	18.4	1.54					
5	Mar-18	10.5	0.56	0.23				
6	Dec-18	28.5	4.02	0.4				
7	Mar-19	9.92	0.59	0.27	5.8			
8	Dec-19	19.6	2.31	0.25	76.3			
9	Apr-20	17.1	0.71	0.21	9.78			
10	Nov-20	20.3	2.17	0.45	30.6			
11	Dec-20					48		
12	Feb-21					84		
13	Apr-21	12.9			3.6			
14	May-21		0.66	0.3				
15	Nov-21	21.8	2.26	0.32	38.1			
16	Mar-22	9.14	0.41	0.33	1.44	36.2		
17	Sep-22		1.94	0.32	41.8	43.2		
18	Oct-22	17.9						
19	Mar-23	8.23	0.56	0.45	2.02	40.8		
20	Oct-23		1.56	0.32	39	38.3		
21	Mar-24		0.34	0.3	1.42	27.4		
22								
Coefficient of Variation:		0.36	0.91	0.23	1.01	0.40		
Mann-Kendall Statistics (S):		-31	-63	29	-12	-13		
Confidence Factor:		95.0%	99.5%	91.7%	77.5%	96.4%		
Concentration Trend:		Stable	Decreasing	Stable	No Trend	Decreasing		

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", [redacted], Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	Southeast	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW112 - Wet	MW112 - Dry	MW139 - Wet	MW139 - Dry	MW297 - Wet	MW297 - Dry	
Sampling Event	**Sampling Date**	**Sum of PFOS+PFHxS µg/L**						
1	Jul-17			5.06				
2	Aug-17		24.5		6.4		28	
3	Nov-17		19.9		5.7			
4	Jan-18	18.4		1.54				
5	Mar-18	10.5		0.56				
6	Dec-18		28.5		4.02			
7	Mar-19	9.92		0.59		5.8		
8	Dec-19		19.6		2.31		76.3	
9	Apr-20	17.1		0.71		9.78		
10	Nov-20		20.3		2.17		30.6	
11	Dec-20							
12	Feb-21							
13	Apr-21	12.9				3.6		
14	May-21			0.66				
15	Nov-21		21.8		2.26		38.1	
16	Mar-22	9.14		0.41		1.44		
17	Sep-22				1.94		41.8	
18	Oct-22		17.9					
19	Mar-23	8.23		0.56		2.02		
20	Oct-23				1.56		39	
21	Mar-24			0.34		1.42		
22								
Coefficient of Variation:		0.32	0.17	1.30	0.56	0.82	0.41	
Mann-Kendall Statistics (S):		-13	-7	-23	-26	-11	5	
Confidence Factor:		96.4%	81.6%	98.9%	99.9%	97.0%	77.4%	
Concentration Trend:		Decreasing	Stable	Decreasing	Decreasing	Decreasing	Stable	

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans",* [redacted]*, Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	South	**Constituent:**	PFOA
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW176	MW180	MW200	MW211			
Sampling Event	**Sampling Date**	**PFOA µg/L**						
1	Sep-17	0.01	0.01	0.03				
2	Nov-17			0.03	0.01			
3	Jan-18			0.03	0.01			
4	Mar-18	0.01	0.01	0.005	0.01			
5	Dec-18		0.01	0.06	0.01			
6	Mar-19	0.01	0.01	0.02	0.01			
7	Dec-19		0.01	0.02	0.01			
8	Apr-20		0.01	0.02	0.01			
9	Nov-20	0.01	0.01	0.19	0.03			
10	Dec-20				0.01			
11	Apr-21	0.01	0.01	0.02	0.01			
12	Nov-21	0.01	0.01	0.03	0.01			
13	Mar-22	0.01	0.01	0.005	0.01			
14	Sep-22	0.01	0.01	0.04	0.01			
15	Mar-23	0.01	0.01	0.005	0.01			
16	Oct-23	0.01	0.01	0.03	0.01			
17	Mar-24	0.01	0.01	0.005	0.01			
18								
19								
20								
21								
22								
Coefficient of Variation:		0.00	0.00	1.31	0.44			
Mann-Kendall Statistics (S):		0	0	-6	-1			
Confidence Factor:		50.0%	50.0%	58.9%	50.0%			
Concentration Trend:		Stable	Stable	No Trend	Stable			

Notes:

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", Ground Water, 41(3):355-367, 2003.*

Mann-Kendall Statistical Trend Analysis

Evaluation Date:	2017-2024	**Job ID:**	754-MELEN338204
Region:	South	**Constituent:**	Sum of PFOS+PFHxS
Conducted by:	Tetra Tech Coffey	**Concentration Units:**	µg/L

Sampling Point ID	MW176	MW180	MW200	MW211			
Sampling Event	**Sampling Date**	**Sum of PFOS+PFHxS µg/L**						
1	Sep-17	0.15	0.09	1.72				
2	Nov-17			2.34	0.36			
3	Jan-18			2.05	0.26			
4	Mar-18	0.13	0.12	0.62	0.24			
5	Dec-18		0.17	4.1	0.58			
6	Mar-19	0.1	0.05	1.46	0.28			
7	Dec-19		0.05	1.55	0.33			
8	Apr-20		0.05	1.81	0.31			
9	Nov-20	0.13	0.05	1.57	0.43			
10	Dec-20							
11	Apr-21	0.08	0.07	1.46	0.07			
12	Nov-21	0.13	0.08	1.78	0.36			
13	Mar-22	0.13	0.08	0.61	0.1			
14	Sep-22	0.13	0.27	2.49	0.03			
15	Mar-23	0.12	0.09	0.76	0.04			
16	Oct-23	0.1	0.07	1.52	0.32			
17	Nov-23							
18	Mar-24	0.11	0.09	0.5	0.08			
19								
20								
21								
22								
Coefficient of Variation:		0.17	0.63	0.54	0.63			
Mann-Kendall Statistics (S):		-22	17	-69	-32			
Confidence Factor:		94.9%	80.9%	99.9%	93.7%			
Concentration Trend:		Stable	Stable	Decreasing	Stable			

1. *Confidence in Trend = Confidence (in percent) that constituent concentration is increaseing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; <95% and S>0 = No Trend, <95%, S ≤ 0, and COV ≥ 1 = No Trend; <95% and COV < 1 = Stable.*

2. *Adapted from GSI Mann-Kendall Toolkit (GSI Environmental Inc, www.gsi-net.com). Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans",* [redacted]*, Ground Water, 41(3):355-367, 2003.*

APPENDIX F: LIMITATIONS

IMPORTANT INFORMATION ABOUT YOUR TETRA TECH COFFEY ENVIRONMENTAL REPORT

Introduction

This report has been prepared by Tetra Tech Coffey for you, as Tetra Tech Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice.

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Tetra Tech Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Tetra Tech Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Tetra Tech Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Tetra Tech Coffey should be kept appraised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statues and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Tetra Tech Coffey would be pleased to assist with any investigation or advice in such circumstances.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Tetra Tech Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Tetra Tech Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Tetra Tech Coffey prepared the report and has familiarity with the site, Tetra Tech Coffey is well placed to provide such assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Tetra Tech Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

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Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.